New York State Conservationist

Courtesy of Harry T. Peters and Life Magazine

"CAMPING IN THE WOODS"

State of New York Conservation Department

June - July, 1948

Days Off

This is the Hudson River, below the mouth of the Indian, just below the Deer Den. Bass and pike live in this pool, and in a certain spot around the bend, very big trout. The River Drivers bring pulp through here every spring, but after them comes only an occasional fisherman, or in the fall, a stillhunter.

Days Off

THE picture on the facing page shows a nice place. This is State land, belonging to the people of New York. The fellow in the bow of the canoe has got hold of a bass, which he landed after shipping quite a bit of water.

That was last summer. A look at the same place just a couple of weeks ago revealed that it was as nice as ever; no change in fact, except that there were some fresh ashes along The River Drivers' Trail where someone, maybe one of the St. Regis Indians who brought the pulp down this spring, had built a small fire. The River looked the the same, though high. Judging by the commotion, the red squirrels had wintered comfortably and were doing the usual amount of business in the spruces across the way. There were deer tracks in the gravel on this side, the same as last year, and signs that a party of 'coons had come through, doing some fishing.

In other words, it all looked reassuringly familiar. Nothing missing, everything in order, but still a lot of small surprises. It was a good place to spend a day off.

We're sending out a map with this issue that shows where this place is. It shows for one thing that it's only about 200 miles as the crow flies from the place where the Staten Island ferry boats cross the same river down at its mouth—which is something to think about. And it shows for another thing that this spot on the Hudson is just a sample of what's available right here in New York. That's worth thinking about too.

But the map does more than show names and places. Along with an article inside this issue, it suggests a point sometimes forgotten these days: that a large part of this Department's job is to fix things so that the average citizen can have a good time on his days off, not just this year, but next year too.

That's quite a job. Right now, with summer started, perhaps it's the most important one we've got.—Editor

Print clearly your name, street and number, city and state, and send this address with $1.00 (check, money order, or cash at sender's risk) to the *Conservationist*, N. Y. S. Conservation Dept., Albany 7, N. Y.

No stamps, please.

VOL. 2, NO. 6 JUNE-JULY 1948

STATE OF NEW YORK
THOMAS E. DEWEY, GOVERNOR
Published Bi-Monthly By the
CONSERVATION DEPARTMENT

PERRY B. DURYEA, *Commissioner*
J. VICTOR SKIFF, *Deputy Comm'r.* ROBERT A. WELLS, *Sec'y.*

DIVISION OF CONSERVATION EDUCATION
CLAYT SEAGEARS, *Director*
FRED EVERETT, BARNETT FOWLER P. W. FOSBURGH, *Editor*
ROLAND B. MILLER EARL McGUIRK, DOUG FINCH
Editorial *Photography*

The Conservationist is an official publication of the N. Y. S. Conservation Dep't., published every two months at the Department's offices, Arcade Bldg., Albany, N. Y. No advertising accepted. Subscription rates $1.00 per year. Entered as Second Class matter July 24, 1946 at the Post Office at Albany, N. Y., under Act of March 3, 1879.

THERE'S NO DETOUR.....Hugh M. Wilson 2
THE HUDSON, PART I.....P. W. Fosburgh 4
ADIRONDACK GUIDE-BOAT.....Roland B. Miller 6
AN ENLARGED PROGRAM FOR FISH AND GAME.....Perry B. Duryea 8
THE DONALDSON WOODLOT.....E. W. Littlefield, W. W. Clingan 10
CAVES IN NEW YORK.....Clay Perry 12
ASHOKAN.....Barnett Fowler 14
IT'S ALL YOURS.....Fred Everett 16
BROWN TROUT.....C. W. Greene 18
ON NOT CATCHING BROWN TROUT.....Sparse Grey Hackle 20
DDT.....William M. Foss 22
FLORA, FAUNA.....A. T. Shorey, Dave Cook 24
HOW TO DRAW A MOUSE.....Clayt Seagears 32

SCATTER SHOTS 26, DEPARTMENT ACTIVITIES 28
LETTERS TO THE EDITOR 30

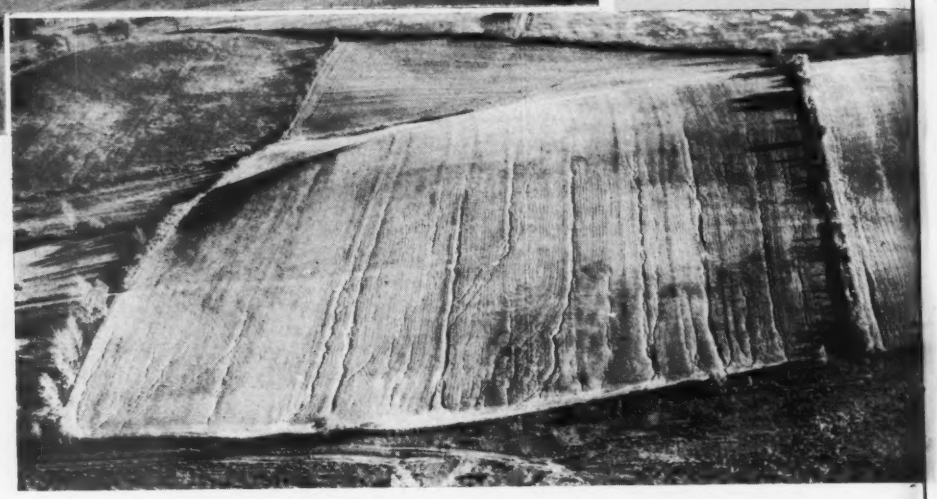
Permission is granted to reprint any text from this magazine provided proper credit is given to the New York State Conservation Department and to this magazine.

There's No Detour

The road to good land is a straight road with no detour.

•

It has been charted by the Soil Conservation Districts.



You can strip-crop and contour-plow and so hold the soil and its produce (including wildlife)

OR

You can use up your soil and let water carry it away, along with crops (including wildlife).

by
HUGH WILSON
Extension Soil Conservationist
Cornell University

FARMER Jones was a disconsolate man. He had good reason to be. Sections of his fields were on their way to the Atlantic via neighborhood streams. His woodlot, cut over, looked like a whisker growth. His year's plantings looked sickly against the brown earth.

Jones was no fool. It shocked him when he at last realized that for years he had been cutting the land out from under him through wasteful practices. Like anyone who was feeling the revenge of Nature he felt the problem was almost unbeatable. Jones, however, was not a lazy man. He was stubborn and what he owned he intended to keep. Somewhere he had read about soil conservation. In connection with that program someone had mentioned the County Agricultural Agent.

Two days later, after a conference with the Agent, Jones had his answer. It was one based on logic and planned hard work. Jones, being logical and a hard worker, understood it perfectly. Either he must work to save his property or it would disintegrate before his eyes.

He found he was like many others; that he was losing precious inches of top-soil because of erosion, and that erosion cut deep layers from his land because he had plowed with no thought for the future. He found the streams on his property ran turgid and wild because he had cut the willows and cleared away the alders and, farther on, had cut out his entire woodlot without a thought for replanting. For a few years inscrutable Nature hadn't bothered him, but finally she had moved around to administer preliminary blows.

As discouraged as he was, Farmer Jones found a bright side. To rejuvenate his land he found he had tremendous, man-directed forces on his side. For one thing (and most important) he lived in a Soil Conservation District. His Board of Supervisors, governing body of the county, had made it so. He found the County Agricultural Agent helpful. It was explained that if he followed a certain routine his land could be saved, though it would take time to compensate for years of misuse.

The case of Mr. Jones is not unusual. It is because of him and many others in a similar position that the Soil Conservation Districts came into being. Most organized soil conservation (which means exactly what it says) is carried on in districts, each a self-governing unit of government, empowered to carry on conservation programs. The boundaries of each district are the same as those of the county in which it is formed. Districts may make agreements with landowners, acquire property, hire highway equipment for use on private land, and secure assistance from local, state or federal sources. In this State, the districts are formed under provisions of a New York State law passed in 1940.

IN its statement of purpose the law says roughly this: "It is the purpose of the Legislature to provide a means to conserve soil, prevent erosion, assist in control of floods, preserve wildlife and protect the tax base".

That is a large order. At the time the bill was passed, few people realized its enormous possibilities. Already 35 of the 56 agricultural counties within the State have become districts, and other

counties are considering similar action. Although a few of the districts are so new they still are "wet behind the ears", many have been in operation for nearly eight years, and in the aggregate we've had over a hundred years experience in district operation.

SOIL conservation is a problem in land use and water management. The object is to use the land for the purpose for which it is best adapted, and also to treat it in accordance with its needs. This point is important. In any given area we have land that is suitable for intensive crop production; land that should be plowed only occasionally; land that should be kept in hay or pasture; or land that should be devoted to timber and wildlife production. By using land properly, we can reduce erosion, lower production costs and produce all the crops (including wildlife) we need.

Water management is based on one hypothesis: at times we have too much; at other times not enough. Our aim is to have available for use all the water we need and to absorb or impound a supply for the future. The excess must be removed in such a way it causes no damage. That means slowing running water to a walk. Do that and you have solved your erosion problems. From the farmer's standpoint, water management means better crops; to the sportsman, better hunting and fishing.

Now let's get back. A district becomes official when the Board of Supervisors approves a resolution to that effect. Such approval comes only after a large group of landowners understand and approve such action. A district formed before it is wanted would fit the definition of a scrub cow: sired by a cull and damned by everybody.

NO such program is possible with 100 per cent co-operation unless a program of education encourages it. This is done through support of such groups as the Farm Bureau, Grange, and Rural Policy Committee. Meetings are held; soil conservation is explained many times through actual tours, special letters and through newspaper articles. The "key man" in this educational program usually is the County Agricultural Agent.

The newly-formed district is a separate, political sub-division. Five directors, appointed by the county board, constitute the governing body of the district. Despite a paternalistic influence exerted by the state soil conservation committee, the district is responsible only to the Board of Supervisors. Since it is man-made, it can be man-destroyed; a district can be voted out of existence at the end of five years.

The first task of the directors is to determine problems of land use which they can correct. These findings become the long-term program. The directors really get to work on the question: "How can the problems be solved?" They cannot solve them alone, so they call in local, state and federal agencies.

Here are some groups which have given most assistance to date:

1. Soil Conservation Service: This is a bureau within the United States Department of Agriculture; it works solely through districts. It provides men, at no cost to the district, who help plan and activate needed measures on land. These men are highly trained in agronomy, engineering, biology and farm management. They are strictly technical advisors. Administration is solely the responsibility of the directors.

2. Extension Service: Education and publicity programs are in charge of the County Agricultural Agent, aided by specialists from the College of Agriculture. In most counties, the County Agent acts as secretary and in some cases is responsible for certain technical recommendations.

3. Highway departments: Most heavy equipment used for diversion ditches and obstruction removal is provided by this department, a legal procedure since the over-all program is recognized as a public benefit. Equipment is rented at a fair rate. In addition, road officials have been very co-operative in lowering or enlarging culverts where needed to provide water outlets.

4. State Conservation Department: All of the 35 districts have adopted the Forest Practice Standards of their respective Forest Districts and have entered into an arrangement whereby the District Forester gives assistance in woodland management, reforestation and marketing. Most of the trees used in reforestation have come from the Department. Recently a new program of wildlife habitat restoration has been started and is being conducted through Soil Conservation Districts. Technical assistance, labor and materials on wildlife programs are provided. In addition, advice and assistance are given on stream problems.

NOW how does a farmer like the aforementioned Mr. Jones even begin to take advantage of the outlined facilities?

The procedure is simple; Mr. Jones requests help from the five-man director board of his district. When directors receive such a request they send a technician to study the situation, and look the farm over with its owner. The soil is punched and prodded; tests are made. Each symptom and condition is noted. Crop and forage needs are studied. A diagnosis follows.

Then comes the prescription: Mr. Jones may be advised that grass or trees are needed to protect the bald and steep spots on his farm from continued erosion. Strip-cropping to encourage the healing of gullies may be indicated. Diversion ditches to remove excess water may be in order. Contour plowing probably would be advised to "slow the water to a walk." Extra fertilizer may be needed to replace plant food lost through erosion. Woodland management, in the form of a planned program of tree planting and cutting, would be a good measure, and another might include streambank protection in the form of cribbing and dams.

The completed plan is written and becomes an agreement between Mr. Jones and the district. It shows what, where, when, and by whom the work will be done. The district agrees to provide such heavy equipment as may be needed, and Farmer Jones agrees to pay rental on such equipment.

ANY fairly new idea may be considered a theory. The test is, does it work? Does soil conservation really work? It does! In some areas where Joneses live, we see patterns of old fashioned square fields and eroding farms replaced by curved strips and erosion-proofed fields. Each district has such a long list of waiting requests that it can hardly catch up with them—but that is a healthy condition.

The farmer landowner is not the sole beneficiary of the work of the Soil Conservation Districts. Certainly of outstanding importance is the benefit that comes eventually to the sportsman, and co-operation between the hunter and fisherman and the district is of the greatest value. In some places sportsmen are furnishing labor to plant willows along streams. In other places the hunter and the fisherman are helping the farmer construct ponds, build fences, and plant trees.

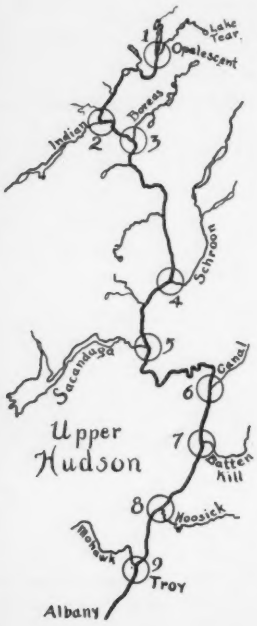
The sportsmen who co-operate with the districts in this sort of work—and to date, far too few of them do—are taking an intelligent interest in their own future as well as that of the soil. They realize that the future of their sport depends on the future of the soil, since the soil produces wildlife just as it produces other crops.

Today, too many of our farms are biological deserts. The Soil Conservation Districts offer a specific and clear-cut remedy. It is no longer a question of can you help by co-operating with them; the question now is, will you?

THE HUDSON

Part 1

Together with Nine of its Major Tributaries at their Points of Confluence



From the official beginning of The Great River of the Mountains in Lake Henderson to the Troy Dam, which prevents the shad and the tidewater from the Atlantic Ocean from going up into the river beyond that point

1

2

3

4

THE PICTURES

1. Enter the Opalescent. *It drains Lake Tear of the Clouds, highest lake source of the Hudson. The official spring source is Hendrick Spring, named after Hendrick Hudson.*

2. Enter the Indian. *Now the water is Adirondack brown, fast, with big fish and very deep holes. This is bear country.*

3. Enter the Boreas. *(River of the North Wind). No passengers on the railroad; just titanium from Tahawus. Above is the stretch most feared by River Drivers. This is deer country.*

4. Enter the Schroon. *The Hudson is now out of the wilderness. Towns that tapped the wilderness of its lumber, via the river, begin to appear. Warrensburg is the first.*

5. Enter the Sacandaga. *It comes from the biggest Hudson River flood control project, the Sacandaga Reservoir.*

6. Enter the Champlain Canal. *Up to this point the Hudson has averaged four miles per hour. Now it slows down.*

7. Enter the Batten Kill. *It comes from Vermont. Near here Timothy Murphy climbed a tree and shot General Fraser in the Battle of Saratoga.*

8. Enter the Hoosick. *It is a monument to pollution and erosion. Like the Hudson itself, it used to be a salmon stream.*

9. Enter the Mohawk. *Below is the Troy Dam, which marks the end of the Upper Hudson and the beginning of the Tidewater Hudson, the hoped-for Northwest Passage to China.*

END of PART 1

Adirondack Guide Boat

THERE was a time, and not so long ago, when the Adirondack Guide-Boat was to the North Country what the Brewster Buggy was to lower Manhattan. It was a good deal more than a pleasure craft. It brought the doctor to up-river settlements; it carried up-river people down-river to church; it brought voters to the polls and decided many a local election. It was also, as its name suggests, *the* boat for guides and fishermen.

If you want enduring testimony to the native ingenuity of up-State New Yorkers, consider the Adirondack Guide-Boat. It is strictly a New York product. It is strictly a masterpiece of craftsmanship. There are still New Yorkers who can and do make them.

The guide-boat, often referred to as the "light truck of the waterways", was originated over 100 years ago. Practically every section of the Adirondacks lays claim to its original design, but Donaldson, in his History of the Adirondacks, (and few care to dispute that authority), holds that nothing of greater historical importance attaches to Long Lake than the fact that the guide-boat evolved there. Its progenitors were Mitchell Sabattis, the famous guide, and one of the equally famous Palmers, who saw the need of devising something sturdier and swifter than the canoe. Their joint product must have been in use as early as 1842, as accounts of that time tell of little boats such as a man could carry on his back.

The guide-boat of those days differed in one fundamental respect from the model of later years: it had a square stern, making for instability. This fault was soon recognized and corrected by Caleb Chase of Newcomb, an intimate friend and adept pupil of Sabattis. In addition to the pointed stern Chase tooled may a less conspicuous refinement into the guide-boat, and after setting up his shop in 1850 he turned out a boat that for 40 years was one of the mainstays of North Country traffic. Most authorities agree that there was only one improvement which Chase did not originate, and that was the decrease in weight successfully inaugurated by "Willie Allen's egg-shells".

"Willie Allen" was William Allen Martin, son of the William F. Martin who, as the first lessee of the Capt. Pliny Miller house, set up the earliest approximation of a hotel in Saranac Lake. The senior Allen required a large number of boats in connection with his hotel business because in the early days he hired all available guides and furnished each of them with a boat. Willie Allen went to work for his father in the boat shop on Lake Street and began to turn out his "egg-shells," and it wasn't long before every guide and camper in the Adirondacks wanted a Martin boat.

With Willie Allen the development of the guide-boat reached its peak, but as late as the turn of the century there were a good many men in the Adirondacks who built guide-boats and were well known for their craftsmanship. Among them were George Smith of Long Lake, Frank Blanchard of Raquette Lake, one of the Parsons of Old Forge, William McCaffery of Bloomingdale, William Kerst of Indian Lake, and Fred Rice and Theodore Hanmer of Saranac Lake. Theodore Hanmer is now 88 years old and has retired after 50 years of boat building, but his son Willard is right now turning out the genuine article in his shop at Saranac Lake. Except for some machinery to expedite his work, the process he uses adheres to the traditional procedure.

TO say there is an average guide-boat would be misleading. Boats measure from 14 to 16 feet long, 32 to 38 inches wide amidships, 23 to 26 inches high at the bow and a little less at the stern, and usually 12 inches deep in the center. Three cane seats, the end ones fastened and the middle one movable and resting on rails, is the usual arrangement. Usual also is a set of rails for the yoke by which the boat is carried. A 16-foot boat will weigh from 76 to 78 pounds without equipment—oarlocks, oars, seats, yoke, paddles and backrests; a 14-foot boat, minus equipment, will go 70 pounds. Oars are seven to eight feet long, well balanced and overlapping several inches to make cross-rowing easier. Floor boards are unheard of, although a strip of carpet is sometimes thrown in as a concession to the "sports" to be carried.

Lumber for the ribs and stems calls for spruce, cut from the stump and larger roots to take advantage of the natural curve of the grain in that part of the tree. Planking is of pine or cedar, quarter-sawed to prevent splitting and checking, and most builders use a revolving frame to which the bottom board is fastened as the initial step in construction. (The Hanmer shop has its own improvised upright rests, in

sockets on sawhorses, and a clamp of its own invention—quite an improvement over the trap spring the elder Hanmer used for clamping.) The inside stems are fastened to the bottom board, as are the pairs of ribs, 22 to 25, which overlap about the width of the bottom board at their particular station. The ribs are about five-sixteenths of an inch thick and seven-eighths of an inch deep. Unless clamping is used, batten strips hold the ribs in place until the planking is put on. Planking strength is derived from the use of first growth lumber. Rib strength comes from adapting the natural curve of the stump or "knee."

THE guide-boat is a carvel-build, (as distinguished from the clinker-build or lapstrake type), and planking one of them is a very particular job. The boards and planking are about three-sixteenths of an inch thick and are cut to fit their assigned positions. Each edge must be bevelled about half an inch, as must the ends of the planks where they are spliced. In the middle of the boat, where there is a considerable curve to the ribs, the planking must be thicker so that it may be hollow planed on the inside center and made convex on the outside—to fit the rib curve.

With each piece fitted into place, the bevelled edges are cemented together, usually with a paste of whitelead and varnish. The planks are fastened to the ribs with brass screws and the joints nailed with very slim copper tacks, alternated inside and outside, the holes for which are braded with a sharp awl. The tacks are driven against a clinching iron to bend them over properly. About 5,000 tacks and 3,000 screws go into each boat.

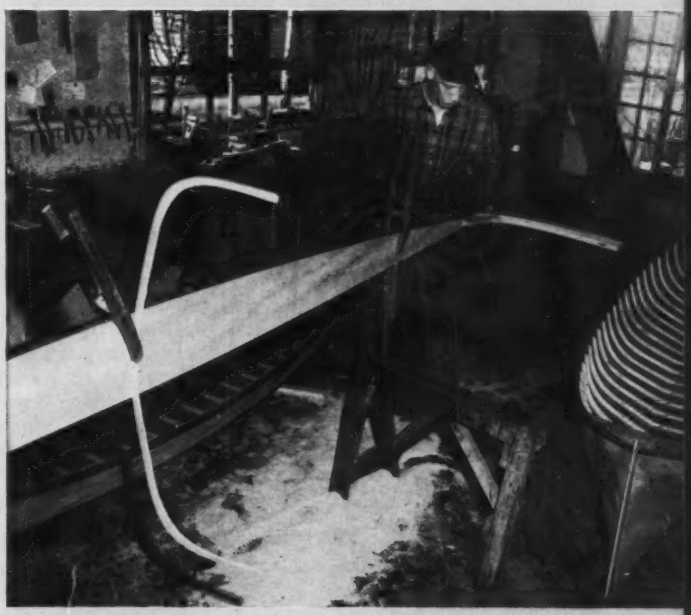
It takes a good workman 10 to 12 hours a day, and a certain amount of luck, to get over a round of planking, and there are seven rounds to a boat. After planking come the outside bowstems, the decks, 'wales, seat and yoke rails, oar irons, stem bands, shoes and finishing coats of paint or varnish, and to complete all this work it used to take Caleb Chase a month of "long days". Now, Willard Hanmer can turn out a boat in a good deal less than half that time.

The guide-boat is still a very practical craft for Adirondack lakes and rivers. It isn't difficult to row one seven miles in an hour; the boat is easily handled, moves quietly, and leaves little wake in the water. It is light and sturdy. In view of their virtues and the pampering they have received at the hands of proud owners, it isn't surprising that there are still quite a few guide-boats in the North Country, some of them still in use after almost a hundred years of service.

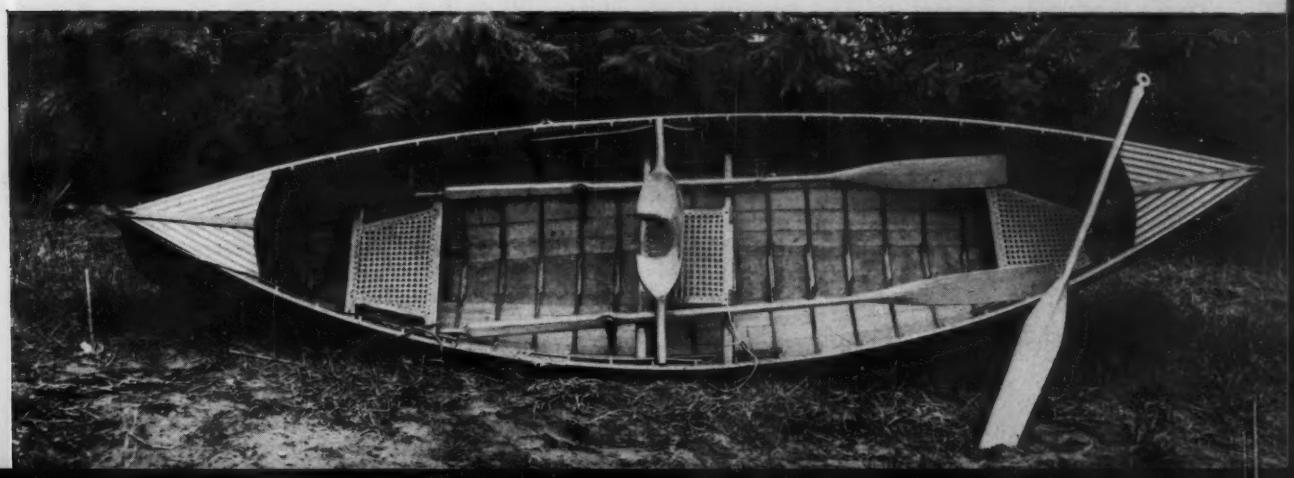
Nevertheless, the Adirondack guide-boat is fast becoming a collector's item. It is suffering at the hands of outboards and light metal craft the same fate it set for the birch bark canoe and crude flat-boats it replaced, and the day has already come when the few craftsmen who can still make a guide-boat can no longer meet the demand.

Yet the guide-boat is still, somehow, the proper craft of the Adirondacks. It is the thing to be in when you round a bend and come upon a deer. —ROLAND B. MILLER

Willard Hanmer with a rough and a finished rib. Stump "knee" provides natural curve so that no bending is required



Setting her up, clamps in place; semi-finished product at right Below, complete excepting backrests; yoke in carrying position



AN ENLARGED PROGRAM for Fish and Game Conservation

Part 1 . . . To Improve Fishing

I BELIEVE it can now be truly said that our State is well launched on an enlarged program of fish and game conservation.

It is made possible by generous appropriations from the Postwar Reconstruction Fund (over $2,000,000), which are enabling us to modernize and expand our game farms and fish hatcheries and to purchase and develop public fishing streams; and by a bigger Conservation Fund resulting from more licenses sold and a modest increase in the license fees enacted at the last session of the Legislature. At the same time, New York State's share of the excise taxes on arms and ammunitions, coming back to us under the terms of the Pittman-Robertson Act, has been substantially increased.

Although the license increase will not become effective until January 1, 1949, when our present fiscal year will be three-quarters over, the Governor and the Legislature have enabled us to gain a year in our progress through appropriations which anticipate this additional revenue.

Our post-war construction program is already pretty much understood. However, this is only a small part of the total program and, at the request of the Editor, I am glad to try to summarize the high spots of the rest of our program. Even in this abbreviated form, it is necessary to make it a two part affair. This first part has to do with the features of the program designed to improve fishing. Part II, scheduled to appear in our next issue, covers those items designed to improve hunting.

The planning of this program has covered a period of many months and is the product of the minds and judgment of a great many people. For me, it has meant over 20,000 miles of travel within our State to take part in some 75 meetings of sportsmen's clubs, federations and other conservation organizations, and finally, last year, the conducting of eight regional fish and game conferences covering the entire State. It also has meant the careful analysis of innumerable suggestions which have come to us in addition to valuable recommendations from the New York State Conservation Council, the Farm Bureau Federation and other farm organizations. Further, we have had the benefit of field reports from our Fish and Game Managers and the small but able staff which directs their work here in Albany. Countless individuals have offered helpful advice. In fact, so many people have been involved that it is impossible to credit properly the contributions of each one.

I like to think, therefore, that our program is the result of all hands working together—which is as it should be.

The decision as to what direction our efforts for improved fishing should take has not been an easy one. Even with improved financing, it was soon clear that only a fraction of the suggestions made could be followed. It also has become obvious that fish management is, as yet, by no means a precise business which can be expanded according to known formulas or techniques which can guarantee specific results. It is, therefore, necessary to pick and choose and to limit expansion to those items which have already proven their worth or which hold out the most promise of success.

To improve fishing calls for a fourfold effort: we must provide more places to fish; provide more fish for stocking; make our waters more productive; and guard against over-fishing. In order to show how our program is developed, it will be compared in some instances to the program of our last normal pre-war year (1941-42).

1. More Places to Fish: In our State, we are extremely fortunate to have so many thousands of acres and so many thousands of miles of waters capable of providing game fishing. We also are fortunate that so many waters belong to the people because they are within the Forest Preserve and other State holdings. However, many of our best trout streams are in private hands and, in order to insure the future use of some of these waters to the public, we are making continuing provisions for the acquisition of perpetual fishing rights on more waters. Before the war, 515 miles of streams had been acquired. As a part of our enlarged program, we have set an immediate goal of a thousand miles of the better streams, double the pre-war figure.

2. More Fish For Stocking: Before the war, the Department was never able to stock more than 50 per cent of the fish recommended for the streams of the State. Our enlarged program calls for the rearing of every pound of trout, bass and muskalonge and other hatchery bred fish up to the full limit of existing hatchery capacity, and to increase that capacity as rapidly as the completion of our post-war projects will permit. Very substantial progress has already been made in this direction. By the end of the present year, we are scheduled to have our annual production up to over 300,000 pounds of fish for stocking. This is 50 per cent more than the pre-war average. When the hatchery in the Catskills and the one at Chautauqua (both now being constructed) get into production and when the further development of our existing hatcheries is completed, we hope to approach 100 per cent of the stocking which our streams should have.

Some idea of the cost of this increased stocking, including the effect of inflation is afforded by the $611,775, which we have allocated to fish production—77 per cent, more than in the last pre-war year of 1941-42. I am sure there can be no argument about our need for this increased stocking program.

3. More Productive Waters. We now have so many fishermen, fishing so many more days and hours, that stocking alone cannot do the job. We must increase the natural productivity of our waters wherever possible, as well as their ability to carry stocked fish. This is one of the newest, most interesting and, I think, most hopeful aspects of fish management.

There are already a number of proven ways to increase this productivity. We have, therefore, made plans to expand their use.

a. Stream Improvement: By arresting erosion, decreasing silting and providing more shade—in short, by stabilizing our streams and improving their condition for fish life—we have reason to believe that we can put them into condition to provide more and better fishing. All of these devices are commonly known as stream improvement. Here we are faced with the enormous task of improving streams acquired during the pre-war period, as well as those being acquired at the present time. During a part of the pre-war period, a good deal of this work was done through C.C.C. camps. Now we must do it ourselves, and for this purpose we have developed trained improvement crews and are equipping them as rapidly as possible with modern labor saving machinery. This year, we have set aside $105,000 for both the acquisition of new streams and this improvement work, and we plan to carry this program on for an indefinite period. This compares with $60,000 appropriated for the same purpose during 1941-42, or an increase of 75 per cent.

BY law, we can improve only State-owned streams. There still remains the great need to get streams in private ownership in better shape. We plan to encourage local groups to do this under guidance which our expanded field force will provide and through a co-operative program for landowners which will be described in the next issue.

b. Fish Salvage and Control of Undesirable Fish: This is one of the newest and most efficient tools for improving fishing. As nearly everyone knows, our skilled crews are doing an outstanding job in salvaging valuable game fish which have been locked up in public reservoirs where no fishing is permitted, and in taking out tons of undesirable fish, such as carp, where their removal is needed for the improvement of conditions for game fish. These crews will be increasingly needed for similar specialized work in connection with the management of local waters. Nothing of this kind was done before the war, yet by next year, we will have expanded this program until we have five trained salvage crews, representing an annual expenditure of $60,000. Through the sale of some of the undesirable fish this work is partly self-supporting, and the game fish which are salvaged can be made available to public angling much more cheaply than their hatchery bred cousins.

c. Better Management of Local Waters: One of the most fundamental fish management principles to emerge in recent years is based on recognition of the fact that no two waters are alike and that each one presents problems which often are quite different. In some waters, fish reproduce well and grow rapidly. In others, natural reproduction is inadequate, growth may be slow, stunting may occur as a result of overcrowding, etc. In order to discover and remove these bottlenecks to good fishing, it is absolutely necessary to have men in the field who are qualified by training and experience to deal with these problems. These men are our Fisheries Biologists. We not only must have more of them but they must be stationed throughout the various regions of the State in the decentralized plan which I have so often advocated.

Before the war, we had only one field unit, located at Rochester. We have increased this number to three and our enlarged plan calls for a total of five. Wherever I have travelled in the State, the need for the expansion of this type of field service has been more than self-evident. The demand for surveys of local waters already has far exceeded the limits of our present staff. Cost of this work will total $89,800 which compares with $23,370 spent during 1941-42.

d. Better Pollution Control: In order to combat pollution successfully, it is necessary to have units of trained chemists so deployed that they can get to the scene of a pollution case within a few hours. Before the war we had one such unit attached to the Rochester office, which endeavored to cover the entire State. We now have two more and our plan calls for assignment of chemists to all of the five district units. The cost is included in the figure given above. We all know that these men need to be armed with a better law, and we have great hopes that the legislative committee headed by Assemblyman Ostertag will accomplish this objective during the coming session. *(See "Pollution," Oct.-Nov. '47 Conservationist; also page 29 of this issue; also future issues.)*

4. More Intelligent Fishing Regulations: Experience is beginning to show that we have by no means exhausted the possibility of improving fishing through more effective regulations. In fact, the surface just has been scratched. A great many of us have always thought that better regulations meant more restrictive regulations. We have learned that this is not always so. We now know that regulations must be designed not only to prevent over-fishing where it may exist but also to provide against under-fishing where crowded fish populations produce stunting and other difficulties. In other words, at long last, there is growing recognition that state-wide fishing regulations cannot fit all waters. Therefore, even though it may lead to some public confusion, we will have to adjust our regulations to the needs of individual waters as and where such needs are demonstrated. This comes back again to the absolute necessity of having trained men in the field.

The subject of regulations, of course, leads to the kindred problems of law enforcement and conservation education. Both of these parts of our work are materially expanded in our enlarged program. Already, we have added 20 Game Protectors to our force and have undertaken to provide our men with better boats and other badly needed equipment. This subject, as well as the vital role of conservation education in our plan, will be discussed in some detail in the second article of this series.

TO sum up—this expanded program for fishing costs about $866,000 annually. This is 102 per cent more than was spent for this purpose before the war. While a considerable portion of this greater cost is due to inflation, it will be seen from the foregoing that a greatly increased effort to improve fishing is now being made. When we consider that more people personally participate in this form of outdoor recreation than in any other, when we consider what it means to their health and happiness, and when we consider the tremendous economic value which good fishing has in this State, we are sure that every cent we are spending to improve fishing is a good investment.

We make no claim that our enlarged program will produce miracles over-night. All we claim is that it is a solid, sincere effort to meet the ever increasing demand for more and better fishing, and that we are already embarked on it. —PERRY B. DURYEA

Part 2

which will appear in the next issue, will discuss the program to improve hunting in New York.

The DONALDSON WOODLOT

and

how it got that way

1838—1948

AS a farm, there is nothing wrong about the Donaldson place. The farmhouse is big and attractive, and had a new coat of paint last year. When you get out of the car and start for the woodlot, you go past a substantial red barn, with a tile-block silo, past fields green with alfalfa or a good seeding of clover, and up through a pasture stocked with pure-bred Holsteins. The remains of a rail fence separate the croplands and pasture from the woods. It also serves another purpose; it marks the dividing line between good land management, and poor.

Over the fence-line (which is no longer a barrier to the cattle) all evidences of intelligent husbandry such as were conspicuous on the rest of the farm are left behind. What looks like a nice piece of woods, from a distance, turns out on closer inspection to be a pretty poor investment. The trees, what's left of them, are short, crooked and sickly. More than a third of them are beech, and there is plenty of ironwood and soft maple—the trees nobody wants. The cows have grazed all through the woodlot so that the ground is hard and grass-grown and there are no tree seedlings under foot. In fact the whole area looks more like a run-down park then a producing forest. Here and there, in the 40 acres of woodland, are some big limby, spreading individuals—"wolf trees", the foresters call them—which are using lots of space but producing no timber. In a dozen spots large openings where too many trees have been cut are filling up with a tangled mat of raspberry briars. It doesn't take an expert to realize that this "beaten up" woodlot isn't getting any better.

DON'T blame Homer Donaldson for this. He bought the place five years ago, during the war. Of course he might have patched up the fence so as to keep the cows out of the woods, and he didn't have to do quite such a job of "butchering" when he went into that southwest corner on a cordwood job, winter before last. But by and large he has been doing just what the owners before him did—forgetting about the woodlot until he has needed some firewood or a few logs. Then he has cut out anything that looked good for the purpose and gone back to his dairy herd, leaving the woods a little worse off than they were before.

The Donaldson place has changed hands six times in the last 85 years. Before that it had been in the same family for more than a generation, ever since the country was settled by a hardy group of Connecticut Yankees back in the 1830's. At that time the whole countryside was blanketed with virgin timber, and on the spot where the Donaldson lot now stands we can picture the original forest almost as though we were there. Sugar maple and hemlock were abundant, we can be sure; big ones, three or four feet through on the stump. Beech too; not like the decrepit second-growth specimens that give beech its poor reputation today, but tall, sound and thrifty, lighting up the dark vault of the woodland with its pale gray, massive columns. On that ridge that runs across the back end of the lot there must have been pine, towering above the rest of the woods, and with it some red oak and chestnut and sweet birch, and perhaps a few hickories. Here and there we would have found a wild cherry with its coal-black bark and mahogany-colored heartwood. On the deeper soils were basswood and white ash, like giant spars, running four and five logs to the tree. That acre or two of swamp along the north side must have been occupied, as it is today, with elm and soft maple and black ash, but of larger size. Under the canopy of these patriarchs a younger forest was making its way toward the light, amongst the shrubs and ferns and wild flowers and fallen tree-trunks and debris that make up the "floor" of an old forest; and below this was the deep leaf mould and the good black earth accumulated through the centuries.

WHAT has happened to this woodlot since 1838? How did it go to pieces like this in a century of human occupation? How was it that 40 acres of land and trees, which could once produce better than 100 cubic feet of wood every year on each acre, today yields less than a quarter of this volume, and poor quality at that?

The story begins with the felling of a few trees to get timbers for the new settlement, and to provide fuel for the great fireplaces and ovens and "airtight" stoves. For a decade or so, this didn't alter the original pattern of the forest to any degree. But in the late 1840's a sawmill was set up along the creek that runs through the south end of the village, and from then on the timber went faster. By 1860, most of the old-growth had been cut, but there was still a good stand of second-growth coming on, with trees up to a foot or so in trunk diameter. From this point until about 1900, more and more firewood was taken out —usually by clear-cutting an acre or two at a time. The hemlock, which wasn't much good for fuel, was found to be highly useful for something else—tanbark—and hundreds of good trees were cut down and stripped of bark, and the logs left in the woods to rot. During this time more and more land went into farming, and what is now the Donaldson woodlot became an island of woods surrounded by fields and open pastures.

IT seemed the natural thing to let the cows run in the woods, and a few cows didn't do much harm. But when the up-State farms began to supply the milk for New York City things changed rapidly, and there were more and more cows, and fewer acres of woods for them to browse in. Where once there were five or six cows on the 40 acres, soon there were 25 or 30, and these were enough to keep the tree seedlings nipped off until after a while all the trees were about the same age; and instead of leaf litter there was bare ground, and grass coming in; and instead of deep, black humus there was hard-packed soil that let the water run off in the spring, and baked out hard in

This is the Donaldson "woodlot" today. A century of mis-management has made a brushlot out of what was once a fine, productive forest

summer. Disease was making its appearance, too. Most of the trees now had come up as sprouts from old stumps, or as root suckers, and they seemed to offer better food for the various kinds of wood-rot than the ones that had started from seed. Bugs, like the sugar-maple borer, found that these park-like woods made better going than the heavy shade of the old forest. About 1915 the "blight" came along and finished the chestnut. This wasn't anybody's fault in particular, but it was one more thing to thin out the woods.

Every time the farm changed hands, the owner cut off the best of the timber before he sold, leaving the "culls" and the stuff like ironwood and beech that was of low value. Or sometimes, he sold stumpage to a lumberman, who did the same sort of thing. By the time Homer Donaldson came along in 1943, there was only one piece of good timber left on the place—five acres in the back corner that was a little harder to get to than the rest and still had some pretty good pine and oak. With wartime prices for stumpage at an all-time high (or so he thought then) it didn't take Homer very long to accept an offer for this timber "lump-sum" from an operator, and that really finished things up in good shape.

ONE step after another, we have seen how 40 acres were reduced in a few decades from a first-class producing forest to a brushlot. Homer Donaldson and his successors will supply less and less of their needs for lumber and other wood-products from the home woodlot; the town will have fewer taxes to collect on it, and the forage there is no good for cattle anyhow. In the meantime, lumber prices at the retail yard in town will go higher (since they must carry freight charges from distant points), and thus add their part to the increased cost of living.

Multiply the Donaldson woodlot by one hundred thousand, and you have the 4,000,000 acres of farm woodlots in New York. Add another six million and you have the 10,000,000 acres of privately-owned forest land in the State. Not all of them, of course, are as economically bankrupt as the Donaldson lot. But too many of them are, and a sizeable number soon will be unless something is done about it.

What is the answer? Shall we let events take their course, or shall we try to use the police power of government to prevent the destruction of our forest resources?

NEW YORK thinks it has a third and better way—its Forest Practice Act. This statute, which became a law in 1946, recognizes the need for improving the cutting practices on privately-owned woodlands, but does not try to force any particular methods of forestry on the owner. Instead, a service has been set up under which any forest owner who has a genuine interest in improving his woods, or in cutting his timber in a fashion that will leave the woods in a more productive condition, can obtain without charge the service of one of the 15 District Foresters in the Conservation Department. These foresters, who are especially trained for this kind of work, have already visited more than 2,200 woodland owners since the program started, and the demand for their services grows constantly.

Just what might the District Forester do? Although the Donaldson woodlot is economically bankrupt, probably for the next 50 years—what might be done under the Forest Practice Act to salvage other woodlots headed toward the same condition? How, specifically, can we save a woodlot before it is past saving?

We will try to answer these questions next time.—E. W. LITTLEFIELD, *Sup't. of Forest Investigations*, and W. W. CLINGAN, *Forester, District 3*

NEXT TIME

The DONALDSON WOODLOT

and

what might be done

about it

WHEN and if the atomic bomb drives the mass of humanity underground, the population of New York State will be ready for the descent. That will be largely because of the efforts of the newest type of sportsman, the little-known "spelunker."

Some people prefer to be on top of the world. The spelunker prefers to be under it. Technically he is known as a speleologist and a speleologist is a cave explorer; the definition is that simple. The sport itself, however, is not quite as easy, since it calls for considerable courage, a knowledge of science if pursued intelligently, and the muscular elasticity of a rubber band. Following corridors within the earth's crust is not exactly a sport for those afflicted with stiffened joints.

Spelunking has no closed season. Its syllabus is the unwritten code of common sense, all adding up to one simple fact: Don't get into anything that you can't get out of. The sport has other advantages, however. In summer the caves are cool, in winter they are warm. Furthermore spelunking discloses startling territory for the man or woman who wants to see sections of the subterranean countryside unseen, untrod upon by millions.

It is no waste of effort, although at times the sudden disappearance of groups of humans into the earth may seem so. Important and far-reaching discoveries have come from cave exploration, of direct application and benefit to mankind. The discoveries of Dr. Donald R. Griffin of Cornell, for instance, led to miraculous advances in assistance to blind soldiers.

This in itself is a fascinating story, stemming from an exhaustive study of cave-dwelling bats made by Dr. Griffin. In his detailed researches of the only surviving mammal with wings, the Cornell specialist captured and banded 15,000 of them. He found, as his work progressed, that bats have a natural radar without benefit of electricity. He found that bats, although flying in total darkness, avoided contact with solid objects through this remarkable natural endowment. Dr. Griffin called it "echolocation," a word which is self-explanatory—the location of objects by echoes bouncing from them. In application of this principal, Dr. Griffin during the war gained national recognition. Just as bats were able to avoid head-on crashes, so blind veterans were taught to use echolocation to move about at will.

There is more to cave exploration than plucking bats from walls and ceilings and making a study of them. For those who explore the corridors there is the fun of it, the adventure.

CAVES in New York, as well as in most sections of the northeast, seem to have hidden themselves not only under the earth's surface, but in remote and not easily accessible places. Those who explore them are members of a highly exclusive fraternity—the National Speleological Society. There are about 50 members of this organization in the State at the present time; more than 1,000 in the United States. There are probably at least twice as many more who go cave hunting without formal membership.

Fifty is a small number in a state that has more than 300 known and named caves within its borders, and 1,000 is a relatively small number in a country that is estimated to possess one million miles of caverns beneath its surface! But it is quite an advancement in the organization of those who like the rigorous sport, for it was only a decade ago that there were no such regular customers for the rich offerings of the underground.

THE writer's hobby, amounting to an avocation, is hunting for hidden history underground, for folklore, legend, tall tales and small ones. Twelve years ago, with others addicted to cave crawling, I entered my first cave in New York State near the town of Millerton in Dutchess County. It is known as the Indian Oven Cavern, and I found it fascinating. It is one of the deepest and largest, is thickly inhabited by bats, has an underground waterfall and walls that rise 75 to 90 feet, joining to create a beautiful, arched ceiling. The top of this cave is honeycombed with grottos, mysterious and many.

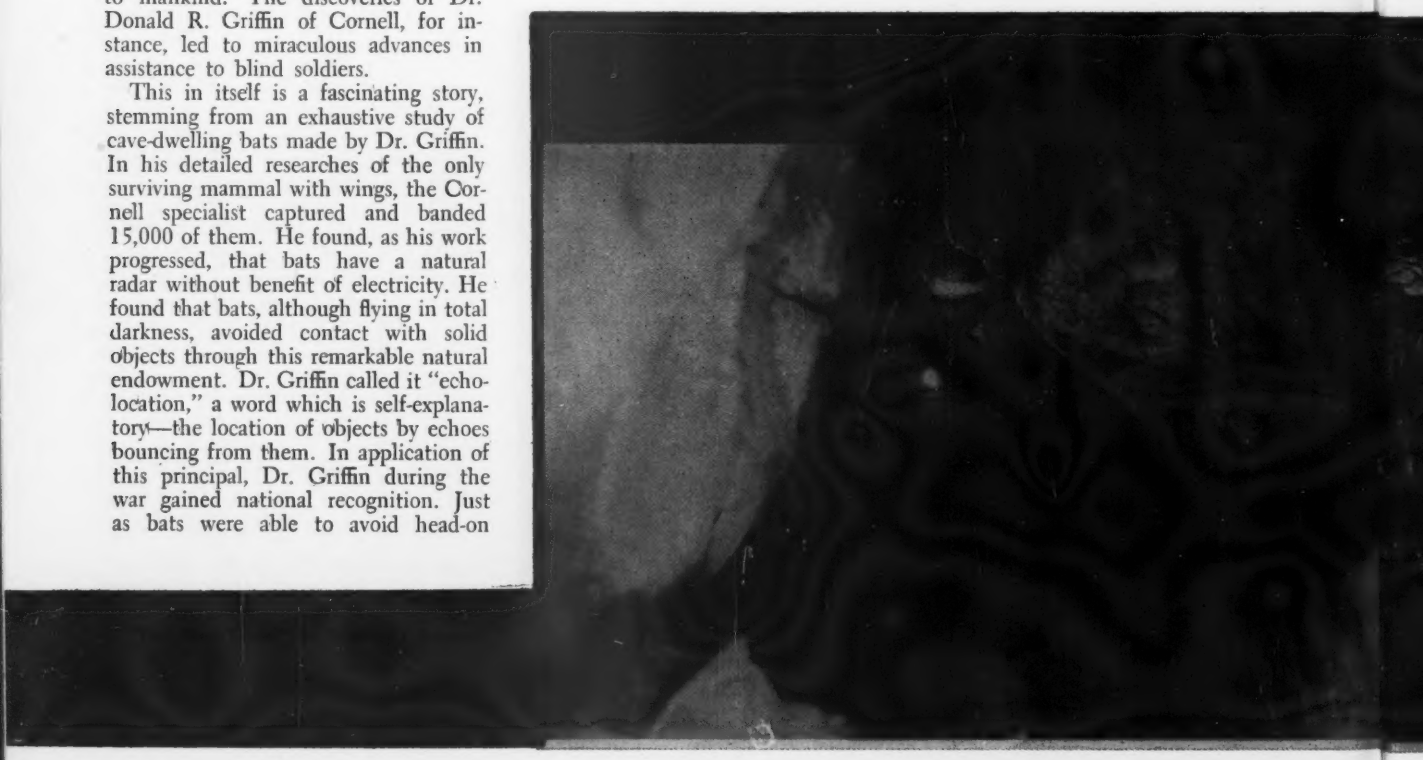
The lighting effects are fantastically wonderful, and are caused by drops of water impregnated with tiny specks of glittering calcite from the limestone of

ALL IN A DAY'S WORK

Clay Perry, author of this article and of the book, "Underground Empire", is a spelunker from Cheshire, Mass. A few weeks ago he got into a tight spot in one of those Massachusetts caves.

Perry was leading a group through Richmond Cave, in North Adams, when a large crack in the wall began to open up and some boulders, shifting, threatened to block the narrow exit. A reporter with the party wrote that for a couple of hours the group was threatened by "two-fold death" (entombment or crushing), and it made a nice spread in the papers.

Perry's cohorts, however, dismissed the experience with a shrug. All in a day's spelunking, they said.



the cavern. Most caves absorb light with their gray stone walls. "Live" caves, those which have water flowing, dripping or just oozing, possess this reflecting quality. A "dead" cave, where there is no water and no continuing growth of formation, has no glitter or reflecting qualities and does not have the romantic appeal of a "live" one.

LET'S go hunting in other caverns —in the Clarksville Cave, about 15 miles southwest of Albany, where the explorer may float on the surface of an underground river that ends up at a deep little lake. Some say trout can be caught in these waters, fish possessed of full vision, refugees from the open waters of Oniskethau Creek.

Or clamber (or rope) down into deep Ball's Cave near Schoharie for another boat ride. The explorer's rubber boat (collapsible type is best) will take him over a natural aqueduct, a canal with 13 tufa dams in its flow of about 300 feet. The early discoverers and owner of this big cavern did not practice conservation methods, inasmuch as the cave was pilfered of tons of formations. One, weighing a ton, was brought up on a windlass, to be hauled to the home of the late John Gebhard, Jr. "to add to his cabinet."

There are many kinds of hunting to be enjoyed underground. Dr. Griffin with his 15,000 bats, and Charles E. Mohr, director of the National Audubon Society with his 12,000 banded animals, probably share top honors in this category. However, seeking bats and other forms of fauna is only one kind of hunting. The search for geological facts is another; the search for passageways and grottos, untrod by man, is still a third, and a thrill in itself.

Unquestionably, many important discoveries remain to be made. Each bit of new information, correlated with what we already have, will certainly reveal new wonders in our vast underground empire.

About a year ago Miss Opal Kemp of Salt Lake City, Utah, wrote to the Syracuse Chamber of Commerce seeking information about the "east caves of Syracuse". She received the answer that there were no caves within 200 miles of the city! Not daunted, she then wrote the Secretary of State at Albany, who turned her letter over to the Conservation Department. It, in turn, relayed the inquiry to the State Museum and eventually the writer was contacted.

Miss Kemp wrote that near Syracuse there was a great cave, or caves, which were actually the western entrance to a subterranean passage that ran eastward beneath the rest of the continent, then under the Atlantic Ocean to England! But, she added, portions of this great subway had broken down and the tunnel was no longer passable. She wished, however, to come east, go spelunking and find those caves.

Well, they're there, all right. Dr. John G. Broughton, Acting State Geologist at the State Museum in Albany, can show you a picture of a group of explorers dunking themselves down into the upper portions of them—yawning chasms in a curious limestone formation known as "karst".

THE Museum, incidentally, has a real cave, restored from a formation that was opened in quarrying operations at the Sterlingbush Quarry in Lewis County. It is a glowing, glittering cave completely made of calcite crystals, translucent, pink, violet, lavender, ranging from tiny ones the size of a diamond to some that weigh 1,000 pounds. There was recently opened at the Museum a cave exhibit occupying some 300 square feet of floor space, as much wall space, and several glass cases, where the public can go spelunking in high heels and fancy clothes. Here are formations from all over the State, numerous unique photographs, maps and literature, and there is also on exhibition a splendid collection of stalactites, stalagmites, flowstones, helictites and other items of natural sculpture work. Spelunker or no, you would find this exhibit most interesting.

But if you want the genuine article in its natural setting, you won't have to go far from home if you live in New York. The caves we mention here are only a few of those that can be safely explored.

Certainly there is much to be seen in "the State that has everything". And certainly there is much to be seen down underneath it.

SOME NEW YORK CAVES

1. Bentley Cavern, west of Berlin Center, Rensselaer County.
2. Hailes' Cave, Thacher Park, Albany County.
3. Knox Cave, Howe Caverns, Secret Caverns, Selleck Cave; all Schoharie County.
4. Mitchell's Cave, on summit of Little Nose Mountain, Montgomery County.
5. Cooper's Cave, under bridge connecting South Glens Falls with Glens Falls.
6. Kiantone Cave, in Allegany Reservation of Seneca Indians, close to Pennsylvania border.

Ashokan

SPORTSMEN who look at the Ashokan Reservoir sense it is good fishing water. It is. But Ashokan has another aspect which makes it the lake of distinction this month. It is the Dr. Jekyll and Mr. Hyde of State waters. Only 33 years old, it has successfully confused at least one half its rainbow trout population into such a state that they have become fit subjects for some Waltonian Freud or Dr. Kinsey.

When that famous Dutch sport Rip Van Winkle shook himself free of his Catskill cat-nap, Ashokan wasn't a gleam even in a thirsty New Yorker's eye. Today it is a man-made, spectacular gem (from the air) set in Ulster County about 14 miles west of Kingston. It is an example of what Big City people will pay for a drink, since they parted company with $31,500,000 in damming the Esopus Creek to create it.

What New Yorkers didn't know at the time was that they were contributing to the formation of a State wonder, where the rainbows would run big and fast and where conditions would eventually become so perfect that the State's record brown trout would end a happy existence in it.

Life awakens in this big body of water slowly. In late winter the ice sheath is flat upon it, a heavy, ponderous thing. In early spring, when the mountains to the north are streaked with the silver of streams, the lake begins to stir. Tiny rivulets, joining with companions on mountain slopes, expand into flooding streams that roar downward into the channel of the Esopus, thence into the Ashokan with the impact of a ram.

With the mountain waters comes the touch of life.

Under the ice sluggish rainbows, heavy with winter inactivity, stir with the touch of freshened waters. Big bodies move slowly against the pressure. With the ice break-up completed, the pace is accelerated and the rush is on. Where once existed slowness, there now exists the furious struggle that amazes all fishermen—the struggle to reach spawning grounds.

Of the waves of rainbows, some of them 32 inches long, that move into the Esopus, many fight their way up and into such streams as the Ox Clove and Stony Clove. Today the runs, instead of decreasing because of heavy fishing pressure, actually have spread into several other streams, such as the Beaver and Panther Kills, Peck Hollow Brook and Woodland Creek, all of which flow into the Esopus. The Esopus, incidentally, is the only spawning stream or travelway to the mating grounds. There are no other suitable inlets to the Ashokan.

The Esopus has an unusual name; is an unusual stream. It is fed by tributaries created by Nature and by a tunnel made by man. Both did their respective jobs well. Schoharie Creek lies north of the Esopus and its waters are impounded in a reservoir known as the Gilboa, also a part of the New York City water supply system. While the Esopus flows out of the Catskills through a southern gateway toward the Hudson, the Schoharie flows through northerly portals into the Mohawk, near Amsterdam. It lies at a high enough elevation, however, to enable the flow to be intercepted by the Gilboa dam, which diverts water through an 18-mile tunnel blasted through the Shandaken Mountain Range into the Esopus at Allaben, in Ulster County.

UNFORTUNATELY the picture is not one of cheer for the sportsman. Because the tunnel gates are not fully adjustable, they are either wide open or tightly closed, and the Esopus, reflecting the flow, many times is either in flood or famine stage. With the gates open, the water from the Schoharie, from another watershed, finds itself mixing with the waters of the Esopus.

So far, so good; the Ashokan is a benign patron of mother and papahood for the rainbows. But this is only in the upper section of the reservoir, above the separation dam or "middle weir" which cuts the lake in half, giving it the appearance of a sausage tied in the middle.

The life cycle in the upper, or west basin, is truly a normal one for the rainbows. The Mr. Hyde complex becomes evident only in the lower, or east basin, below the dam.

THE ESOPUS, the only inlet of consequence, is mostly denied the trout in the lower basin, since the fish cannot move up and over the dam. Many times as New York drains the lower pool, there is a tremendous difference in water levels; with no fish ladder the rainbows are helpless, even though Gargantuan efforts are made to move up and over. What is the result? Those fish that spawn in the lower basin do so in the gravel beds near the dam, in the lake itself. Others, it is believed, denied the completion of their instinct, resorb their eggs in disgust.

This year and last the spawning runs began after the season opened. Catches were many. Game Protectors who patrol the area constantly (even though it is owned lock, stock and barrel by New York City) reported the average rainbow extracted this year weighed four to five pounds and was about 24 inches in length. That's a good average; if it keeps up, large frying pan sales in Kingston should boom.

A lake with a split personality can produce startling scenes. One is evident annually during the runs when at least 200 fishermen perch on a retaining wall near the middle dam, jamming a space more suited to 100. This is the spot where fishermen line up in Catharine Crickish fashion, sometimes two deep, like impatient citizens at a two-by-four lunch counter on a rainy day.

Despite enormous pressure, fishing is "growing better." This is the opinion of Bill Goodman, District Game Protector, Kingston Division, who with his men know the Ashokan score. Should the sport nose-dive, it is obvious that certain measures will have to be taken, either by decreasing the daily limit or the number of times a man may drop a line into the lake.

The shores of the Ashokan are as irregular as a sound track record. Patrolling them is difficult. Violators are nabbed only through the persistence of Game Protectors, since a man can park an automobile alongside the road and within seconds vanish into the thick screen of foliage that fringes the water. Patrolling the lake is therefore a matter of shore-line prowling, but if the violator can't be seen, neither can the law until the two are face to face. Game Protectors covering the lake will tell you plenty of stories about creeps and crawls in the best frontier tradition.

Facing the State is the "problem" of the fish ladder, whereby the rainbows could surmount the middle weir and move up into the Esopus or its tributaries to spawn. Such a project would have to be developed in co-operation with the City of New York and only upon its say-so. Certainly the trout could have no objection. If the need ever arose and a ladder were constructed, slide rule precision on the leaping abilities of the rainbow would have to be applied. Furthermore, the greater spread of carp, now present mostly in the lower basin, would have to be considered. Carp, the big bad wolves of trout waters, do not possess the hurdling qualities of the rainbows, but in a spirit of exuberance they might try a hop out of the lower basin—where they have become not only noticeable, but thoroughly objectionable—and so infect the upper waters.

The carp, incidentally, probably came into existence from scuttled bait fish.

The fish ladder, while enabling trout from the lower basin to reach the Esopus, presents no immediate problem because even without it fishing is improving all the time. If that were not the case, a ladder might receive serious consideration.

IN discussing New York City's relationship to Ashokan, we ought to review another aspect. Many times a big municipality, to satisfy the desire of millions for water, must absorb trout streams in the process of damming them for reservoirs. Sometimes the total fish population in the area may decrease; other times it may increase, as at Ashokan. But the latter reservoir illustrates not only this fact, but the fact that two purposes—water supply and sport—can exist side by side compatibly, neither interfering with the other; both resulting in good for the many. (Also see article on Kensico, Feb.-March '47 *Conservationist*).

While its most spectacular asset seems to be its rainbow fishery, the 8,315-acre Ashokan produces far more than this species. T. E. Spencer in 1923 was an astounded man indeed when he pulled the State record brown trout from its waters, a fish weighing 19 pounds, 14 ounces. This brown was pulled from the Chimney Hole section where the Esopus empties into the lake, but browns almost as sensational have been caught at the base of Broadhead Mountain.

Chimney Hole produces big walleyes as well as browns, with some of them running nine to nine-and-one-half pounds. Good walleye catches have been reported throughout the lake, however, since the fish haven't gotten around to the point where they choose favorite spots to be caught.

The black bass in the upper basin will reach five or six pounds; the ones in the lower pool run a little lighter. The entire area was pickerel territory until the walleyes hit the war trail and packaged most of the pickerel offspring in their stomachs. When pickerel were caught, they ran about 24 inches.

The fisherman at Ashokan is faced with several "problems." His first and biggest is to obtain permission to enter upon New York City-owned property—which means the entire area. This can be done by writing to the Department of Water Supply, Gas and Electricity, New York City, care of the Commissioner. In answer, a small card will probably arrive, signed by Commissioner Cannella, who has been eminently co-operative. The card is "good until revoked," and legalizes the fisherman insofar as reservoir guards are concerned. (But he must also have a regular Conservation Department fishing license.)

His second problem is to fish without a power boat, since it is obvious, the reservoir being a source of drinking water, that such boats cannot be allowed on its surface. The fact is that boats of any kind seem to be few and far between.

ANOTHER problem is potential. No pollution exists now and as far as New York water supply officials are concerned, none ever will. The fisherman, therefore, can protect his future privileges by guarding against gestures that would mess up the water. New York thought so much of the reservoir when it was being constructed that all trees, brush and other "objectionable matter" were removed from the basin to be flooded. (Also removed was a large section of the Ulster and Delaware Railroad—not because it was a polluting agent, but because the average locomotive is not equipped with a periscope.) Still, any possible pollution is a matter of great concern to Ashokan authorities and fishermen should bear that all-important fact in mind. What has been given by the City of New York can be taken away.

Buried in a pine grove near the reservoir is a large monument of masonry, a tall structure apparently constructed from left-over stones from dikes and dam work. Names of those who helped create the fabulous lake are inscribed thereon.

One name is missing. There is no mention of the Rainbow, the guy who local anglers think really made the place famous.

—BARNETT FOWLER

Next Issue:
CONESUS

It's All

WITH Vacation Time in the offing, the query-and-complaint corner of this modest office is beginning to receive a special, seasonal type of mail. We get it every year just about this time. The gist of it—and it makes us unhappy—is this: "Such and such a state *has* this and *does* that; why in ——— doesn't New York?"

The thing that makes us unhappy is that we in this Department know full well that nine times out of ten New York has *had* this, and has been *doing* that, for a good many years, and our first reaction to such mail is a mixture of resentment and pity for the ignorance of our correspondents. But then we get to thinking. If people don't know what New York has to offer in the line of outdoor vacations, whose fault is it? Theirs or ours?

It could be ours. It could be that in our attempts not to blow our own horn we've leaned over backwards and failed to present, adequately and fairly, the case for our own State as a vacation land. Anyway, the purpose of this article is to do just that. Obviously, in this space we can only touch on the highlights, but perhaps we can suggest enough of the picture so that in making your vacation plans you'll find something, right here in New York, that fills the bill.

Just look at the map that accompanies this issue. It tells, far more graphically than words can, what this State has to offer. That's quite a lot, and it's all yours.

TO begin with, this State is only 29th in size, yet it contains one-tenth (14,000,000) of the Nation's total population, and in this respect ranks first. Yet it has not only the greatest city in the world, but also one of the Nation's largest wilderness areas, preserved forever by law for the use of the people.

Geographically, New York has great variety. Westward lie two of the Great Lakes joined by Niagara Falls, one of the Seven Wonders of the World; to the north is the St. Lawrence with its Thousand Islands; to the south and east is the Marine District, with one of the busiest harbors in the world and all types of salt water recreation and sport. Inland are the fabled Finger Lakes, thousands of miles of rivers and streams; mountains, hills, rich valleys and rolling plains. What sort of country, what kind of vacation are you looking for?

Water: If you like water, this State contains about three and a half million acres of it. That's an area larger than the whole state of Connecticut, and nearly twice the combined size of Delaware and Rhode Island. This water is contained in more than 8,000 lakes and ponds. One of them is Oneida, nearly 80 square miles in surface and the largest lake—completely within the boundaries of a state—to be found east of the Mississippi. As a fishery, it is one of our most fertile and most famous. And there is Sacandaga, home of the world record northern pike. And thousands more. We feature one of them in each issue of this magazine, but we'll be in the publishing business a long time before we can do justice to our inland waters.

We have, for example, about a half a million acres of trout water, not including streams and rivers. We have Lake George with its lake trout, the Finger Lakes with rainbows and lakers as well as other species, and the wild, brook trout waters of the Adirondacks, such as unique Cranberry. And we have other types of waters filled with as great a variety of fish life as can be found anywhere in the world.

As to streams, New York has enough miles of them to reach nearly three times around the world; approximately 70,000 miles. They range all the way from the lordly Hudson and Mohawk systems (and the beautiful Chenango and Susquehanna) down to tumbling mountain brooks and quiet valley creeks. Seventy thousand miles of them, all in your State. They provide almost limitless opportunity for boat and canoe trips, for camping, fishing, and swimming; all in addition to what our lakes and ponds have to offer.

Streams filled with many kinds of fish. In trout streams alone we have between 17 and 18 thousand miles, enough to reach more than five times from New York City to the Pacific. Streams such as the Beaverkill, Esopus and Ausable, famed the world over for their trout fishing; the Kinderhook, Salmon, Wiscoy and many, many more. Let's see; how many trout of what size should be stocked in each little spot? How important in proportion is my pet pool?

Land: If we have water, we also have land. While New York is small compared to some states, still it is larger than the whole state of Maine with Connecticut, Massachusetts, Rhode Island and Delaware thrown in. What's more important is the great variety of our land. We have everything from the finest seashore beaches (down on Long Island) to the best in mountain wilderness (in the Adirondacks and Catskills), and in between there is a wide range from which the vacationist can choose.

The Adirondacks alone, rich in folklore and legend, should suffice any one state. Here is a wilderness in the midst of the Nation's most heavily populated state. Here are towering ranges and 5,000-foot peaks; wild rivers and streams, quiet mountain ponds; rare flowers and ferns; deer, bear, otter, fisher, marten; vast distances and big timber; seclusion and adventure. Your land, more than two million acres of it State-owned; six million acres all together.

Yet the Adirondacks are only part of the story. In the Catskill and Southern Tier regions and on Long Island, the people of New York have holdings that bring the total of State-owned land up to roughly four million acres—more

IF YOU DON'T K

Detailed information on the vacatio am may be had for the asking. Specific ques answers. Contact local representative of Forest Rangers, Game Protectors, etc.) o wri

The map inserted in this issue sho d it has appeared before. Further informa on magazine and in recreation circulars publis list of back articles, and also of the circula

than in all the other states combined.

These figures of course do not include other millions of acres in private ownership that are available to the paying public. But within the "Blue Line" —the line which marks the boundaries of the Adirondack and Catskill State Parks and which includes both private and State-owned land—there are more than six and a half million acres of vacation land; an area more than twice the size of the Yellowstone and Yosemite National Parks combined.

When the over-all picture is viewed from these angles, it is indeed impressive. Physically, New York has got what it takes to provide vacations.

NOW where does this Department fit into the picture? The answer to that, too, is a long story, one that we can only outline in this space, but here are some of the main features:

Parks: In addition to the Adirondack and Catskill State Parks, there is a system of 77 parks and 20 parkways maintained by this Department's Division of Parks. At least one is located within convenient driving distance from each major community, and in the aggregate they offer the widest variety of recreational facilities to more than 20 millions of visitors annually. That figure doesn't include the millions who use the Adirondacks and the Catskills.

There is no comparison with any other state park system simply because ours—yours and mine—is one and a half times greater than all the others combined. On Long Island alone there are 16 parks containing 12,826 acres and 12 parkways including 9,272 acres, with 8,997 acres of ponds and lakes not included in the foregoing figures.

Trails and Campsites: Right here in New York, and without paying one cent, vacationists can enjoy the best and most unique system of trails, lean-tos and public campsites in the world. They are maintained by this Department's Bureau of Camps and Trails. No other state has a service that is even comparable.

This system extends through the Adirondack and Catskill State Parks. There are 31 public campsites, 738 miles of wilderness trails with 170 lean-tos scattered along them, and additional hundreds of miles of canoe trips. (The most famous traverses the heart of the Adirondack wilderness, from Old Forge through the Fulton Chain to Loon Lake, a total of 102 miles.)

Every summer at least one and a half million people from all over the world use our free campsites. The cost to the State for furnishing these campsites and their facilities—which include pure drinking water, garbage collection, fire places, wood, sanitary facilities, protected bathing areas, services of woodsmen-caretakers and their helpers—is about ten cents per person, regardless of the length of the camper's stay. Our campsites have a capacity for slightly less than two and a half million camper days.

Fishing: It would take at least two volumes to tell of the fishing to be had in this State; one volume for the fresh water, the other for the salt water species. In the first volume you would read about muskalonge, great northern pike and walleyes; large and smallmouth bass; brook trout, rainbows, lakers and browns; landlocked salmon; bullheads and pan fish of all sizes and varieties. Fish for the expert; fish for the string-and-bent-pin angler. In the second volume you would read about the big game fish of the sea; swordfish, tuna, stripers; also about weakfish, blues, and the flattest flounders.

What does this Department do to help maintain our fishing? More than any other state. Each year from our 21 fish hatcheries and rearing stations approximately a hundred million fish are stocked. Of trout alone we stock between five and six million a year, by all methods from piggy-back to airplane.

And the State has bought about 600 miles of stream fishing rights, with more to come, to insure to the public the perpetual right to fish on some of our best trout streams. Stream improvement work has been done along many of these miles. In addition, all the lakes and streams in our millions of State-owned acres are open to public fishing—more public fishing waters than in any other state.

Hunting: We hate to be repetitious, but that "more than any other state" also applies to public hunting; we have more acres open to public hunting than any other state. In order to keep them stocked with game we have our seven State Game Farms and a modern, comprehensive system of game management.

As to our game farms, our record in pheasant production is among the highest. Last year more than 100,000 pheasants and 100,000 day-old pheasant chicks were distributed, and in addition, about 40,000 eggs. Also a few thousand quail and ducks.

But our major objective in providing good public hunting is to manage our native stock of both big and small game so that there will be a good natural supply from year to year. Toward this end the State has been divided into eight Game Management Districts, with a District Game Manager and his staff established in each. They are the regional directors of our deer, bear, grouse, pheasants, rabbits, woodcock, waterfowl—of the great variety of big and small game that brings hundreds of thousands of hunters into New York's woods and fields year after year.

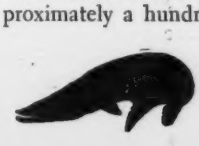
AS we said at first, it isn't our policy to blow our own horn. But we think it's justified in this case because we think you're entitled to know —if you don't already—what this State has to offer in the way of vacations.

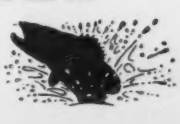
It has a lot to offer. And it's all yours.

—FRED EVERETT

KNOW—ASK

and recreation facilities in our State questions will receive the most specific of this Department (Park Officials, write to the Albany office. d be extremely helpful. Nothing like on can be found in back issues of this blished by this Department. A partial ulers, appears on page 28.





BROWN TROUT

THE BROWN TROUT is truly a suspicious character, skulking behind rocks and logs and, in general, a frequenter of dives. He has assumed many aliases in his time and is many things to many persons. To the brown trout fisherman he is a highly respected, assiduously sought after opponent but one with an unreliable character and somewhat questionable ethics. To the true Adirondacker to whom "trout" means native brook trout, the brown trout is little better than a masquerading carp. To the hatchery man and the fish manager, the brown presents the series of problems in production encountered when trying to maintain a heavy population of big brown trout in all fishing waters while an army of fishermen is at the same time intent on removing them.

(The last sentence was written without adequate forewarning of the article that follows this one. We view said article with profound suspicion. But if there indeed exists a man who attempts *not* to catch the brown trout, then possibly a new day is dawning for the hatchery man and the fish manager.)

The ichthyologist is interested in the brown trout as an animal: how and where did he originate, how should he be classified, what is his life history and what is his natural distribution? All these questions, except the last, are good subjects for an ichthyologists' town meeting. The natural distribution is fairly well known and recognized to be European, ranging from the seas (and presumably rivers) of northern Norway to isolated fresh water colonies as far south as the Atlas Mountains. Its distribution has been greatly extended by stocking, especially in North America, Australia, and South Africa.

The history of the brown trout in this country began with a shipment of 80,000 eggs received by Fred Mather at this Department's Cold Spring Harbor Hatchery, Long Island, from Herr F. Von Behr, in 1883. These came from fish from the Rhine River and tributaries. A part of this consignment was sent to our Caledonia hatchery and there became the nucleus of a successful breeding stock. A sufficient number of fish from this first shipment escaped from the hatchery into Spring Creek at Caledonia to furnish some notable fishing two years later and maximum weight of browns taken at that time was reported by one authority to have been as high as three pounds. Incidentally, Spring Creek and Oatka Creek into which it flows still afford excellent brown trout fishing.

Von Behr shipped brown trout eggs from the same source in several subsequent years, and other lots (mostly Loch Leven eggs) were received from Scotland and England. From 1886, distribution of brown trout fry to New York waters expanded rapidly.

Considering the various sources of eggs, what is our brown trout? The practical answer seems to be that, if there were noticeable differences in original strains, these have disappeared through inter-breeding in the hatcheries. In general, there has been much discussion about how many names to call the brown; in times of stress, of course, the fisherman may confer several without pause for discussion.

The life history of the New York brown trout in our usual stream habitats is comparatively simple. Eggs are deposited in October or November in nests or "redds" prepared by the female. Redds may be from a few inches to over a foot deep depending upon size of the fish and composition of the gravel. After expenditure of considerable time and effort preparing the redd the female settles toward the bottom with the male and spawning occurs. Action of the current in these hollows holds eggs and sperm together for a few seconds—ample time for fertilization to occur.

AFTER the eggs are deposited the female fills the nest with gravel, covering the eggs, and sometimes preparing a new redd in the process. Under normally favorable conditions, therefore, two of the criticisms of the efficiency of the natural trout spawning activities are without effective foundation. A very high percentage of the eggs normally are fertilized and losses to egg predators are not critical.

The eggs hatch in early spring and the young trout wriggle up through the gravel. Brown trout usually reach maturity in their second or third year and occasionally may live into their tenth season, possibly even longer. Most will die naturally before reaching such a ripe old age, and by far the greater number of browns creeled today are in their second, third or fourth years.

The life cycle is completed with spawning, and a trout may live out his life span in the space of a few hundred feet of stream. More commonly, however, browns migrate down-stream from the spawning area, possibly as fry, or later. According to Henry Lamond's excellent work, "The Sea Trout", the true silvery, migratory, smolt stage is usually not reached until the third year and more commonly later. In our streams the brown trout is less migratory than the rainbow and perhaps even less than the brook trout. Either the smolt stage does not occur or is not recognized in our waters. Browns taken in lakes are generally silvery, however, and are often mistaken for landlocks.

MANY fishermen have difficulty in distinguishing between brown trout and young landlocked salmon. In streams where young salmon may occur the fisherman should be sure that his "brown trout" *have orange tipped adipose fins and do not have a deeply forked tail.* There are other, less well defined differences, but when these two characteristics agree one way or the other, identification is reasonably sure.

But this is a minor worry for the brown trout fisherman: he must first catch the fish (some cranks will argue even this point—see following article) and the brown, whether smart or naturally suspicious, is not easily fooled by angler's arts. Feeding habits of brown trout, as of many other fish, are affected by temperatures, light conditions, fly hatches or the lack of them, turbidity of the water, size of the fish and other variable conditions including phases of the moon. Moreover, while other fish tend to be uniformly greedy, the brown trout is temperamental. If some little thing is not just right, sun too bright, clouds too heavy, wind too hard or no breeze at all, the brown may retire to his lair and sulk. Or perhaps he concentrates his interest on caddis fly larvae and ignores the fisherman's offering, be it pale evening dun or simple, slimy garden hackle. On top of all this, brown trout, apparently more than others, "get education".

Of course, the extent to which a

trout can learn to recognize and avoid lures of various kinds is strictly a moot point. Trout fishermen seem generally agreed, however, that the brown trout, when given the opportunity, will acquire a good deal of lore about lures. It seems only reasonable to ascribe to education at least part of the difference between the slap-happy browns in some of our northern, less accessible waters and the wary, sophisticated approach of a Beaverkill or Esopus brown. In these two streams and many others including the Batten Kill, Wappingers, Ten Mile, Neversink, East Branch Delaware, Oriskany, Oatka and Wiscoy, there is not only the opportunity but the necessity to learn, if a trout is to survive very long. (The author of the following article is not the type of angler on which our brown trout should base their life expectancy.)

THAT large numbers of browns do survive the open season in our good streams has been repeatedly demonstrated by our post-season census work and spawning observations. In a heavily fished small stream in Dutchess County, for example, yearling and larger brown trout were counted, after the season, at the rate of 93 per mile. In the larger Wiscoy, post-season counts of legal size browns ran much higher. From such investigations, there is considerable evidence to indicate that even in the heavily fished streams spawning populations of brown trout are usually adequate for production of young. Critical limitations seem to be lack of favorable, accessible spawning grounds and lack of favorable conditions for survival of young trout—and not lack of spawners.

Ideal management would provide all possible optimum conditions for all stages of trout in each trout stream or pond. Where necessary, it would also provide the trout to supplement natural production. But in practice, it appears that New York's brown trout waters are at once too large and too small for ideal management. They are too large to allow maintenance of optimum conditions with our present facilities and too small to give a satisfactory yield when impaired by erosion, unfavorable population conditions, pollution and a number of other environmental ills.

The extent of our brown trout waters also makes difficult the acquisition of the specific information required for best use of management resources. For example, present production of young brown trout probably would come close to satisfying the capacity of our brown trout waters for rearing them if allocations and planting methods were 100 per cent efficient. Since each water unit has its own unique characteristics, capacities of the various waters to rear young browns can be understood only through specific knowledge of survival and growth rates for each water unit. Surveys classifying waters according to key characteristics have been of indispensable help, but we need more.

Hatchery production of catchable-sized browns is a race between the hatchery truck and the fisherman (place your bets, gentlemen—you've got a sure thing!) The hatcheries are doing a great job, but the fishermen have no trouble staying ahead. Cost of production and type of fishing afforded by this method of stocking have led to some serious thinking about possible improvements or substitutes. Some authorities, impressed by the extent of high quality wild water as compared with hatchery space, insist that putting more wild waters in shape to rear small trout would pay big dividends. The hitch seems to be that hatchery techniques are known, while thorough-going habitat improvement involves techniques which are unknown or comparatively untested.

THE brown trout has the stuff to give fishermen a stiff battle, and the good fishing still to be had in New York trout streams is due in no small part to his tough temperament. But the fisherman has an increasing advantage in growing numbers, better equipment and better transportation. Then, too, the brown bears the brunt of the pressure, for trout fishing in our big, accessible streams is brown trout fishing.

So, if he sulks and turns down every fly in the book, don't blame the brownie. Rather, congratulate yourself and him, for only by such behavior can he stay in the stream, to be there when you come again. —C. W. GREENE

ON NOT CATCHING BROWN TROUT

by Sparse Grey Hackle

Copyright 1948 by A. W. Miller

IF fly-casting for brown trout is to be anything except a complicated way of not catching fish, you must have the co-operation of the fish. To get it, you must do what the fish tells you. There are times when you can change a brook trout's mind about not wanting some brightly-colored fly, and the rainbow is so unstable mentally that you can often induce him to take a spinner that he does not want by using a little high-pressure selling. But if you want to do business with a brown trout, you must go where he is and be there when he wants to feed; and if your fly does not look and act like something he is hungry for, your casting will only be so much light exercise. The brown trout is a sneering, skeptical, negative-minded fish who starts with the assumption that you are wrong and dares you to change his mind.

It was a great shock to me when I found this out, for I had spent years in cultivating the red face, ample waistline, overbearing manner and short temper of a Big Executive. To be at the beck and call of a snivelling little brown trout was not compatible with my dignity. Does a Big Executive let people tell him? No, he tells them. Does he give them what they want? Certainly not; he makes them take what he wants to give them. Does he go to a salesman's office and beg him to take an order? Not unless there is a war on!

IT seems to me I should have been created a brown trout instead of an angler; but since I'm not, I decided long ago to stick to being a Big Executive.

"Gentlemen," I told those trout in my most executive manner, "if you want to do business with me you can jolly well come over where I am, and you can take whatever fly is on my leader—or else."

I have never regretted that decision for by it I learned that the fun of fishing is in fishing, not in catching fish. I don't mean just enjoying the trees, flowers, birds, etc. as the hypocrites proclaim even while they are passing up all kinds of fine scenery because it has no fish connected with it. I want fish, plenty of them and big ones, in any stream I fish. It is lots more fun to not catch big fish than to not catch little ten-inchers. No, what I want to do is fish good water with the best equipment but in such a way that I don't catch anything. It is like going through all the thrills and vicissitudes of courting a girl, right up to the point where you are about to propose to her, and then walking away. You get all of the fun without any of the consequences.

When you make up your mind not to catch fish, you avoid such consequences as continually changing your fly and still worrying constantly that you are using the wrong one. You do not have to risk your neck and bark your shins by wading around in the uncouth places in the stream which fish seem to prefer, but can walk wherever the going is easiest. When a fish rises behind you, you do not have to climb laboriously out of the stream, fight your way back through the brush and re-enter below him, only to have him refuse your fly, anyway; when you hear that splash, you can turn around and give him the five-fingered salute and the Bronx cheer, or throw a rock at him. And above all, you don't have to clean any fish.

I have had lots of fun by sticking to this decision. It has enabled me to spend more of my time in barrooms and beds than if I had been trying to catch fish. It has permitted me, through long afternoons of pleasant exercise on warm-water stretches devoid even of chubs, to learn a reasonable amount of casting skill and, particularly, to master the casting of the right- and left-hand loops. It has given me time to chew the rag in endless kaffeeklatsches with chance-met fishermen on the stream. It even has created for me a reputation as an angler, for I quickly learned that one does not need to catch fish to be considered an expert; one needs only to talk a good game. My extra-curricular activities have paid extra dividends of reputation in addition to the regular disbursements of fun.

The trouble was that fish began annoying me. Rising trout began to interfere with my casting practice and interrupt my meditations on the stock market or the price of beans as I absent-mindedly waded and fished. So I finally had to evolve a positive technique for not catching brown trout. It works anywhere in the Catskills and on any other waters where the fish are cynical, sophisticated and skeptical.

IN the first place, I wade in the deepest water I can find. I buy salmon waders, cut armpit high, and I am not happy unless I am wet up to the suspender buttons, for otherwise I feel I am not getting my money's worth out of that expensive piece of equipment. I never get out of the stream if I can help it and I certainly never do anything as undignified as hiding behind a bush or kneeling in order to reduce the very considerable amount of skyline that I block off.

Of course, I slip sometimes on account of stepping on fish. But at least, any fish I step on or even come close to will not take my fly. By always taking pains to wade where I should be fishing and place the fly where I should be wading, I insure a permanent state of fishlessness.

In the second place, I always cast the longest line I can. Like practically all other fishermen, I lose control and delicacy as I lengthen my cast and, furthermore, if I have a long line out I won't be able to strike any fish that may be foolish enough to rise to my dragging fly. This has one other advantage, too. It gives me a reputation as an expert; fishermen call it "casting a beautiful line." Of course, if you were logical you would say that a beautiful cast is one that comes back with a fish on the end of it. But you're not logical—you're a fisherman. So I cast a beautiful line. And fish never disturb it.

TO make long and beautiful casts, I use a hard rod with a good stiff top, a torpedo-head line and a short, thick leader. There is nothing like a powerful, stiff rod for throwing a long, beautiful line and there is nothing like a powerful, stiff rod, either, for busting the leader and leaving the fly in the fish when I strike. The torpedo-head line makes a satisfying splash when I lay it on the water and scares the fish into convulsions, which serves them right, the unco-operative little jerks! And the short, thick leader keeps the heavy end of the line close enough to the fly to prevent any fish taking an unhealthy interest in it. And you can't beat good old 7½ foot 2x or even, in low water, 9 foot 3x for holding the fly stiffly on the water and preventing it from floating naturally with the little surface currents. Leaders like that also keep me from using those deadly little No. 18 and No. 20 flies; I can't even get them through the eye of the hook. I might add, however, that 3x gut is all right for bucktails; it is sure to break when a big fish strikes.

When it comes to flies, I base my choice on the fact that by far the greater part of the fish caught in the Catskills on the dry fly are taken on Quill Gordon, Hendrickson, Light Cahill, Royal Coachman and Ginger Variant. Who am I to say that fifty million fishermen and ten thousand trout are wrong? I take no chances of catching fish by using any of those patterns. I invent my own flies, which guarantees that they won't take fish; try it yourself, if you don't believe me.

Finally, to have positive assurance that I won't catch fish, I take every precaution to fish where there are none, or at least where they will be in no mood to take a fly. One of the best of such places is a nice big pool. To be sure, there are often fish in pools but they only go there for the protection of deep water, when they are resting or hiding. I can safely assume that no such fish is going to be interested in a No. 16 fly floating on the surface six or eight feet above him; he probably won't even see it. What he will see is the ten or twelve fishermen who have preceded me up the pool within the last 15 minutes. I can safely assume that the first man scared him into a nice dark crevice under a ledge, and the rest kept him there.

On the other hand, I avoid broken water and shallow rapids, where the fish food is found and where, curiously enough, the fish goes when he is hungry. In the first place, it is too much trouble to put a fly in front, in back and on both sides of each stone; and in the second place, I might catch a fish who failed to see me because of the broken surface above him and who had to make up his mind about the fly passing over him in such a hurry that he didn't have time to look it over carefully or wait until it started to drag.

Another good way to avoid fish is to neglect the temperature and the level of the water. If the boys got their fish down in the big water, in the slower parts of the stream in April, I would feel pretty safe in fishing those places in July, when the water had warmed up 30 degrees or more and dropped until the rapids were slow enough for the fish to live in them comfortably. In the later summer, I always fish in the late afternoon and evening, when the water is the warmest, and stay safely in bed during the early morning and forenoon, when it is coolest.

AND so I go happily on, fishless. I know the rod-makers, and I am a master hand at waggling a rod without any line on it and saying judicially that it seems a little slow at the top of the middle joint. I know the fly-tiers, and can tell you what Betty Grieg thinks of Greenwell's Glory and distinguish between the flies tied by Harry Darbee and Walter Dette and their respective wives (they can't do it themselves, so I am safe in my guesses). I know the writers, and can tell you what I said to Lee Wulff and Ray Bergman, and what Ed Hewitt and George LaBranche said to me.

I have my waders made in England to fit my Big Executive figure and import my leaders from London. But I never carry a creel or a net, and when I see other fishermen cleaning their catch I merely smile to myself. My hands never get dirty and my frying pan never stinks because I never catch a fish. I get all of the fun without any of the consequences.

The foregoing article is an extract from a book, "Fishless Days," which the author intends to write sometime.

D D T

A plantation of red pine ruined by sawflies

THE time has come to state plainly, and in all seriousness, the position of this Department with regard to the use of DDT.

As almost everyone knows, DDT—developed in 1874, but first used as an insecticide during the last war—is strong medicine, potentially dangerous to all forms of life. So is alcohol. But since we have become familiar with its properties we have had no fear of using alcohol to suit our needs and purposes.

In our opinion, the same may be said of DDT. This Department uses it extensively as a spray to control forest-destroying insect pests; our low-flying planes, trailing streams of sinking fog, have been seen by many of you over our forests in the summer time; they are spraying DDT against gypsy moth, spruce budworm, or some other insect that previous investigations have shown to be ravaging that particular area. But we are not experimenting. We have passed that stage, and although we do not claim to know everything about DDT we *do* know that what we are doing is both safe and effective.

Still, there is a wide misunderstanding both of the general properties of DDT and of this Department's use of it. Some individuals have come to consider it a cure-all for insect problems; others have viewed its widespread use with alarm. Extravagant claims have been made for its effectiveness and after reading some of the literature dealing with the potency of DDT, one could well imagine an insect-free world. Such claims have been taken seriously by certain groups and they have become alarmed by a vision of a DDT-created biological desert. It is, therefore, not surprising that some of the publicity given DDT has not been based on factual data but is rather the expression of a fear of what could possibly happen if the entire earth's surface was repeatedly treated with this insecticide.

The fears expressed by many as to the injurious effects of DDT on fish, birds and animals, (including man), have been alleviated to a considerable degree as the result of experiments conducted by reliable agencies during the past few years. These experiments revealed that DDT when properly used will not result in harm. The experienced control worker, such as those employed by this Department, realizes that DDT, like any other insecticide, is a poison which when properly used can be of great service to mankind, but like all poisons should not be used in excess; neither should it be recommended as a solution to all insect pest problems.

In appraising the role of DDT in forest and shade tree insect control, several factors, such as its effects on foliage, fish, birds, animals and beneficial insects, must be considered.

Occasional injury to foliage has been observed when relatively high concentrates have been used, especially where overdosages of DDT in oil solutions have been applied. Maple leaves are subject to severe burning when exposed to an excess amount of oil and some of our ornamental shrubs are very intolerant to oil sprays. Care must be used in the selection of the proper type of DDT spray, and the amount applied should be carefully determined in order to avoid damage under all conditions.

CONCERN has been expressed about the toxicity of DDT to honey bees and other beneficial insects, and some people have expressed the opinion that the balance of Nature would be disturbed by the use of this insecticide. There are probably very few cases in which Nature *is* in balance. If there ever was a perfect balance of Nature, man upset it many years ago. The occurrence of outbreaks of injurious insects resulting in the stripping of foliage is in itself evidence that Nature has failed to maintain a balance between insects and the vegetation on which they feed, and that Nature needs help from man.

There still remains much to be learned as to the effects of DDT on honey bees, but there are indications that it will prove to be far less toxic to this insect than the arsenicals. Much of the early alarm with regard to its effect on honey bees seems to have been unwarranted. Some apiculturists are even looking to DDT as a possible source of relief from the loss of bees resulting from the use of arsenicals. Applied at the rate of one pound per

Not autumn, but mid-summer: forest tent caterpillars did this job

acre to forest and shade trees, DDT appears to have no detrimental effects on bees, but care should be taken to avoid spraying over hives or applying DDT sprays to plants, shrubs, and trees while they are in bloom.

IT IS known that some of the *beneficial* parasites are highly susceptible to DDT, particularly to repeated applications. This is not a serious consideration in our forest insect control work since applications of DDT are usually confined to one treatment per year and are seldom repeated in the same area the following year. But in planning shade and ornamental tree control programs, careful consideration should be given to the kind and abundance of insects present and these factors should play an important role in the selection of the spray or combination of sprays to be used.

During some of the early experimental work, DDT was applied at the rate of five pounds per acre to determine the effects of such high dosages on both insects and wildlife. It was quite apparent that DDT when applied in such strengths was destructive to birds and far exceeded the amount required to control most injurious insects. The amounts used for further experimental work were rapidly reduced to one pound and one-half pound per acre. These lower dosages proved effective against most leaf feeding insects and were not injurious to either the adult birds or the nestlings, but the effects of the high dosage sprays on birds received considerable publicity and bird lovers became highly concerned. Additional studies were initiated by the U. S. Bureau of Entomology and Plant Quarantine and the U. S. Fish and Wildlife Service to determine the maximum amount of DDT which could be used and still avoid damage to bird life. It was determined after careful study that applications of under two pounds of DDT per acre could be used safely. During the past few years observations have been made on many of the forest areas sprayed for the control of the gypsy moth and other forest insects, and the bird life within these areas continued at a high level throughout the summer. Young birds were reared within these areas in the same number as in the untreated check areas. Contrary to the opinion of many, *the insect population remained abundant*, although some species of leaf feeding insects (those against which the DDT was directed) were exterminated.

With fish, the story is different. Fish and most other forms of aquatic life appear to be highly susceptible to DDT poisoning, and only very light applications are considered safe to use on waters that are inhabited by fish.

The U. S. Fish and Wildlife Service in a report entitled "DDT: Its Effects on Fish and Wildlife" calls attention to the fact that fish are very susceptible to DDT and that dosages over one-fifth of a pound per acre are unsafe to use on streams. There is always the danger of an accumulation of poison, even when small amounts of DDT are applied, if a considerable mileage of water is involved; therefore it is considered good policy, (and we adhere to it strictly), to avoid direct application of DDT to streams supporting fish life. Under no circumstances should DDT emulsions be applied to fish-inhabited streams since DDT in this form readily mixes with the water. Frogs and tadpoles are also very susceptible to DDT. This fact should not be overlooked in mosquito control.

Most forms of animal life are comparatively tolerant to DDT, and therefore its effect on animals is not too important a factor in determining the role of DDT in forest insect control work. Suffice it to say that the amounts used for such control work have no detrimental effects on animals inhabiting our forest lands.

So far, we have confined our discussion to the possible misuses of DDT. They are many, but with proper care and knowledge, easily avoided. But what about a more positive argument for the use of this insecticide?

THE importance of insect control for protection of forest and shade trees must not be underestimated. Insects are one of the major reasons for tree deterioration. Repeated attacks by leaf defoliators lower the resistance of trees, making them more subject to attack by disease. We have only to look at our elms in August to realize what can happen to unprotected shade trees.

At this point we should pause to consider the fact that the average annual loss to forests resulting from insect attack is in some areas of this country greater than the annual timber cut, and far exceeds the annual fire loss. During the recent gypsy moth outbreak in Massachusetts several hundred thousand acres of forest were defoliated. Outbreaks of the spruce budworm in Canada have resulted in the loss of millions of cords of pulpwood; two elm-bark beetles, carriers of the Dutch elm disease, are real threats to one of our most valuable shade trees; outbreaks of numerous other injurious forest and shade tree insects take a tremendous toll periodically. Such facts cannot be overlooked; neither can we expect Nature to solve this problem.

Prior to the time DDT came into use as an insecticide, there was no economical method of combating many of the destructive insects. The cost and the dangers involved prevented the use of arsenical sprays over large areas, so we were compelled to wait for Nature to run her course even though considerable damage resulted. The rapid depletion of our forest resources resulting from improper cutting practices and fires will no longer allow us to continue to disregard tree losses due to insect attack. In DDT we have an economical insecticide which can be applied by modern methods and which should do much to reduce losses.

During the past three years the New York Conservation Department has treated some 120,000 acres of forest land with DDT for the control of the gypsy moth and other forest insects. Dosages have been limited to one-half to one pound per acre and in *all* instances care has been exercised to avoid the direct application of the insecticide to streams inhabited by fish. Observations, carried on during and for a period of several weeks after application, failed to reveal any detrimental effects.

Such tests, along with similar experiences of other reliable control agencies, have proved that in DDT we have an efficient insecticide which can be used to control destructive insects and which, when intelligently applied, will have no ill effects on fish, birds or other forms of wildlife.

—WILLIAM M. FOSS
Sup't., Bureau of Forest Pest Control

Summer again: these trees were thoroughly stripped by gypsy moths

POISON IVY: vacation hazard No. 1

TIME was when Indians, wolves, panthers and snakes were the principal worries of those who roamed the back areas of New York. It took quite a while to eliminate the rapacious animals and adjust the Indian. As for snakes, in spite of the fact that thoughtless people still kill practically every snake on sight, no known species that ever existed in New York has become extinct. We still have a few rattlers and copperheads, but they've been localized and so can be avoided.

Most outdoor people have inherited or acquired an observing eye for animals of the wild that might give them trouble. But when it comes to plant life, there aren't so many who can distinguish between a blueberry and a huckleberry, and still fewer, alas, who can tell poison ivy from squaw currant, Virginia creeper or dewberry.

That's too bad. Every year thousands of vacations are totally ruined by the little three-leaved plant you see in the accompanying photograph, and the sad thing is that just a few minutes' study might have saved days and weeks of frantic scratching and searing expletives. Mister, it behooves you to know your poison. As opposed to snakes and wolves and even Indians, poison ivy has no respect for man.

It grows all over the State except in the interior regions of the Adirondacks, but it's particularly common in the southern areas. A shrub, it spreads from its root system, and unfortunately does a very good job of seeding itself. Sometimes it grows innocently eight or ten inches high and looks like young maple sprouts; sometimes it grows like a vine and climbs over stone walls and up into tall trees. But no matter how it grows, it has a stem with three leaflets, one terminal and two opposite. The leaves are sometimes but not always notched, and in spring and early summer they are a dark glossy green and have the appearance of being wet. Later in the season they dry up and turn a duller green. The stems are grayish and are often covered with rootlets or suckers by means of which the plant does its climbing and twining.

But the thing to remember is the three-leaf arrangement. Forewarned is forearmed, and all the forewarning you need to keep out of trouble with poison ivy is another good look at that photograph. Nice leaf arrangement, isn't it?

In case you should want to know a little more about this baleful weed, be advised that it blooms and bears fruit. The blossoms are white, tiny, and inconspicuous. The fruit is a small berry that is ivory green when young and dusty gray when mature, and after the first frost the berry clusters look like dried up fox grapes. In winter, (and remember that this plant carries a sting the year round), the cluster of brownish buds from which the three leaves spring looks like a tiny hand with the thumb turned into the palm, and the thumb of the other hand placed just below.

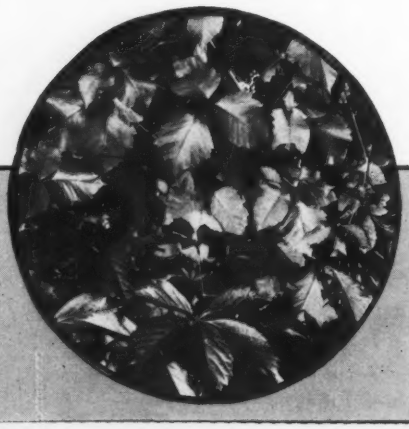
As thousands of New Yorkers have found out to their sorrow, the slightest contact with any part of the poison ivy plant can produce painful burning and itching erruptions of the skin, accompanied by blisters. As the blisters break and the poisoned water seeps out, the infection spreads and unless properly cared for will last for weeks, the victim repeatedly infecting not only himself but others who have had no actual contact with the plant. Clothes carry the poison. They must be washed with strong soap to eliminate it. And bear this in mind: some of the worst infections have been contracted by people who stood nearby—with a happy sense of accomplishment and final victory—while they burned poison ivy vines; they weren't aware that the smoke also carries the poison, and penetrates clothing.

If you should be unfortunate enough to get into trouble with poison ivy in spite of all your precautions, in the box on this page you will find the latest word on what to do about it. The other approach to the problem—eradicating the plant—is easier planned than executed.

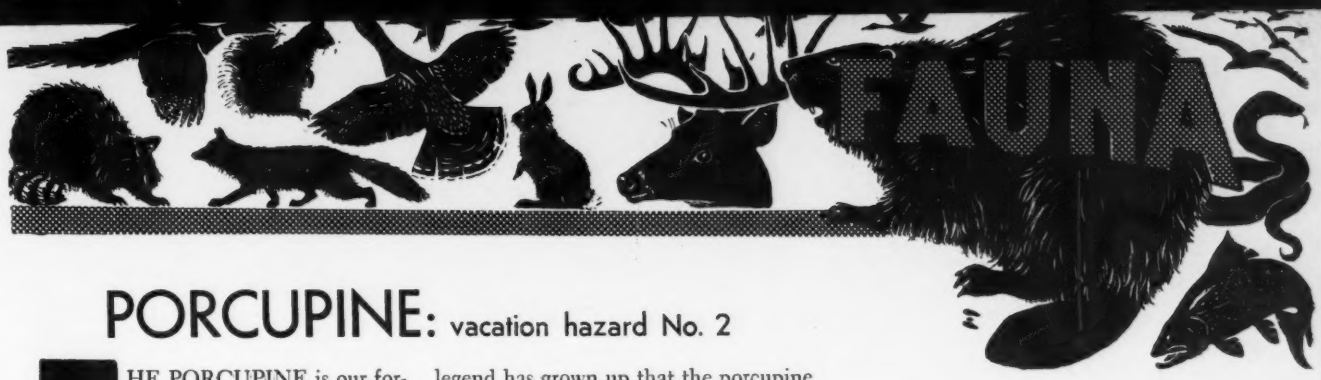
THE writer's grandfather waged relentless war against poison ivy in his hay field. For ammunition he used brine from his salt pork barrel, and although bare spots in the field attested to his persistence the ivy popped up in different places each year. Today we use a solution of ammonium sulfamate powder (three-quarters of a pound thoroughly mixed with a gallon of water), and a gallon of this spray will adequately treat a hundred square feet of ground. The spray must be handled with care, however. It is a strong corrosive, harmful to eyes and hands, and the spray gun must be cleaned after use. Another poison ivy killer is 2-4-D, but as it is also a killer of other plants it should be used only by those who are familiar with its properties.

In the long run, the best way to handle the poison ivy problem is not to handle the plant. Give it a wide berth.

—A. T. SHOREY



POISON IVY above, Virginia creeper below. First sign of ivy poisoning is reddened skin that itches considerably. Blisters follow. Immediate treatment will prevent development of poisoning. Wash exposed areas with soap and water, then with some solvent such as alcohol, benzene, or cigaret lighter fluid. If poisoning develops, apply calamine lotion containing one per cent phenol or menthol. In advanced stages, apply ten per cent aluminum acetate. Consult your physician.—*Office of Public Health Education*



PORCUPINE: vacation hazard No. 2

THE PORCUPINE is our forest's best example of the intellectual degeneration that comes to those who possess what seems to be an invincible defense. Having few effective enemies among the woodland folks, he never had to keep a sharp lookout or hustle out of harm's way. So he developed a negative disposition and a dim outlook on life.

The porky is built for power rather than speed, a rounded, grunting mass followed by a blunt tail. He pursues the important trifles of his own business without much heed to what goes on around him. His best gait is a fast waddle but he customarily proceeds with the extreme deliberation of one who knows that his path is safe. His skull is thick, his bones massive, his muscles strong. Like all rodents, he is equipped with big gnawing teeth in front. These he uses to fill his ample stomach, often to the considerable annoyance of others.

His armor is an impenetrable coat of little spears, complete except on the belly; his defensive weapon a powerful, pin-clad tail. These quills are devilish implements. They are modified hairs, considerably bigger than normal ones, hollow and with a smooth finish. Their tips run out to needle-sharp points and are finely barbed for the last half-inch. Attachment to the skin is loose, so that they pull out easily.

When assuming an attitude of defense, porky puts his head down, pulls up his back feet and waits. In this pose he presents a pin-cushion appearance, with quills pointing outward in all directions and with his tail ready for instant action. If approached too closely, that tail flips back and forth, with intent to slap the unwary intruder. Because of the startling suddenness with which this happens and the violent and involuntary reactions of the victim, a legend has grown up that the porcupine can shoot his quills as an arrow is shot from a bow. It isn't so, but the flip-flap of that tail is so quick that it is easy to see where the idea came from.

Once a quill sticks into some unwary animal, it moves only one way—in. The fine barbs just behind the tip prevent its backing out, and every movement of the victim's skin or muscle drives it deeper. Woe betide the unfortunate creature who sticks his nose into the porcupine's business. The quills become more and more deeply embedded, often interfering with eating, putting out eyes and ultimately bringing death.

Around camp, porcupines are a nuisance. They have an incredible appetite for salt and will gnaw on anything that tastes of it—tool handles, kitchen furniture, outhouses. Worst of all, porcupines always hold their family reunions under the cabin between two and five in the morning, accompanied by much grunting, growling, and gnawing.

In the forest, the porcupine is a singularly destructive rodent. As with all other eaters of green things, it takes a great deal of his bulky food to maintain him, especially in cold weather. The summer diet of herbs, leaves and twigs hurts nobody, for there is enough and to spare. But in winter, he must subsist on evergreen foliage and tree bark. Being lazy, a porcupine climbs into a tree and stays there, perhaps for several days. The result may be severe defoliation, even on sizable trees. Young conifers, especially hemlock, may be killed outright. In forest plantations, larch and Scotch pine are favorites.

Another unpleasant trick is for the porcupine to climb into a tree top and sit himself down in some comfortable crotch. So ensconced, and without the necessity of moving, he eats off the bark to left and right as far as he can reach. At best, this makes a terrible wound; at worst, it girdles the stem so that the treetop above the injury dies. Around rock dens, where porcupines congregate in winter, the bark at the base of hardwood trees is often eaten off in patches. This permits the entrance of wood-destroying fungi.

The porcupine is a slow reproducer—one young a year. But the only wild animals that successfully prey upon it are the fisher and the bear, the former being a notorious porcupine-killer. Highway accidents and human interference, along with the low birth rate, are now the principal porcupine control agents, and except in specific localities they keep the porky from becoming unduly numerous.

SOME folks advocate the complete and absolute protection of the porcupine on humanitarian grounds. They contend that a man lost in the woods could sustain himself on the meat of the slow and easily-captured porcupine. For my money, that is the bunk. Few people get really lost in New York's woods and those that do would probably be too frightened to successfully assail a porcupine.

Besides which, the merit of hastily-grilled porcupine is questionable. If I were lost in the woods, I'd spend my energy trying to find my way out, and not go fooling around with porcupines.

—DAVE COOK

PORCUPINE: If you or your dog mix it up with one and come out second best, the quills should be removed immediately. Grasp each quill firmly, close to the skin, with a pair of pliers, then pull straight out with a sharp jerk. On furry hide be sure no hairs are gripped along with the quill—the operation is painful enough without pulling hair too. Many other methods, such as cutting the quill, soaking it in kerosene, etc., have been tried but are not effective. With quills removed, treat the injuries as you would any puncture wound.

SPRING BIRDS—In our last issue we ran a little piece commenting on the shortage of winter birds. We are now pleased to report what almost everybody has already found out for himself; that at the present writing there's a bird of some kind in almost every bush.

New York ornithologists, amateur and professional, have reported seeing a great many birds this spring, unusual in variety as well as number. Those who knew their stuff ticked off bay-breasted, hooded, Canada, myrtle, Blackburnian and chestnut-sided warblers; rose-breasted grosbeaks, indigo buntings, Maryland yellow throats, wood and Wilson thrushes, peewees, least flycatchers, red and white-eyed vireos, and redstarts. Not just a few, but lots of them, and more exotic species too. Even the feeding station group conspicuously absent in some sections during the winter—mainly chickadees, juncos, nuthatches and woodpeckers—came back in force.

It seems that we owe this spring visitation mostly to the weather. The Audubon Society says that high winds, rains and low ceilings (you remember what May was like) delayed the usual spring migration and forced birds down out of the skies that would normally have passed high over New York on their way to nesting grounds farther north. Once they got down to earth, the competition for available food caused them to fan out into localities where some of the species had rarely been seen before.

So, no matter what you think of last May as a month, its clouds had a silver lining. A lot of handy pocket bird guides got dusted off.

SOUND FAMILIAR?—The following is from a recent speech made by Clark Venable, nationally known outdoor writer, in Columbus, Ohio. Mr. Venable was addressing the Associated Field Trial Clubs of Ohio and trustees of the League of Ohio Sportsmen:

"Without undisturbed nesting cover, winter cover, food, water, and control of irresponsible gunners, we can never bring back the crop of upland game. It isn't the (Ohio) Conservation Division's fault that intensive farming has caused serious loss of cover and nesting areas. This has happened in many midwestern states as well as in Ohio, where the game crop is at an all-time low. Instead of helping the game departments, too many sportsmen in America want to put down a dollar for a license and then expect to take out $50 worth of game with no further effort on their part. . . . No game department can perform a miracle in wildlife restoration. Quit throwing rocks at the game department and get in and help them with a program of habitat restoration if you want to have good shooting again in Ohio.

"Quit spending your money for entertainment and quit buying game to release on barren ground, where Nature herself cannot raise game. Spend your money for restoration of suitable living conditions on your hunting territory and pay the farmer to do it. Then, and not until then, will you get the game crop back. The Ohio Conservation Commission is on the right track in their program of habitat restoration, but it can't be done overnight or by magic."

NEW FLY-DOPE

SINCE publishing Dr. Glasgow's story on the blackfly in our April-May issue, we've had a lot of inquiries about repellents: what's the best fly-dope, not just for blackflies but for other insect pests as well?

In answering these inquiries here, we have something in the nature of a scoop. There is a brand new fly-dope—an improvement on a war-developed product—but in effectiveness, brand new. It is called 622. It is six parts dimethyl phthalate, two parts dimelone, and two parts indalone, a formula which has never before appeared under the name of 622 or any other designation. It has been tested by the federal Department of Agriculture's Bureau of Entomology and Plant Quarantine and by Canadian scientists, and has been found extremely effective. It was brought to our attention by Mr. A. F. Allen of the State Department of Health. He and Mr. A. G. Whitney of the State Museum investigated 622 thoroughly, tested it over Memorial Day weekend, and submitted the following information to us in the hope that by acquainting our readers with the new product they might be spared some unnecessary torture.

622 is so new that your favorite tackle store or druggist may not have it. If not, The Bickmore Company, Old Town, Maine, now manufactures a salve form and will soon have a liquid form; B. G. Pratt Company, 160 Moore Street, Hackensack, N. J., manufactures a liquid form; J. R. Watkins, Winona, Wisconsin, puts out a cream form. So far as is known, at the present time there are no other outlets for 622.

According to our informants: a light application of 622 in any form gives complete protection for from four to eight hours, and possibly longer; sprayed on clothes, it may last a week or more; it is pleasant smelling; although injurious to rayon, it does not affect nylon and so will not harm many of the fishing lines currently in use.

PANTHER DAM—Hearings on the proposed Panther Mountain Dam (Herkimer County) were held before the Black River Regulating District in the Watertown Courthouse June 8 and 9. They will be continued in the same place July 1 and 2, and will receive full coverage in our next issue.

At the June hearing, supporters of the dam—which would impound the South Branch of the Moose River—held that it would provide better flood control in the Black River Valley; that it would alleviate Watertown's sewage disposal problem by ensuring a more consistent flow in the Black River; and that it would mean "better economics" to the entire region.

Opponents held that the project was not for flood control, but power; that it would destroy 1,500 acres of State-owned land as well as a large block belonging to the Adirondack League Club; that it was unconstitutional, and that no public benefit would result.

AFTER MANY A SUMMER–Death, as it must to all creatures, recently came to "Old Purple Tail". "Old Purple Tail" was a pheasant 10½ years old, and for all but the last year or two of his life he headed up a sizeable but carefully selected harem at the Ithaca Game Farm.

An autopsy was performed by Dr. Haberman of our Pathology Lab. He reported to Game Farm Foreman Dick Reynolds as follows: "The primary finding was pneumonia. Other post-mortem observation confirmed your diagnosis of arthritis. Right and left femoral-tibial joint capsules were well studded with calcium deposits, fibrin and other inflammatory products. A peri-arthritis of the right-scapula-humeral joint was also in evidence."

LEGAL RETRIBUTION–The Wildlife Management Institute recently reported an unusual manner of handling a game law violation. The incident occurred in the State of Florida.

Instead of meting out the usual not-so-severe fines, the Florida judge offered three deer poachers their choice of serving six months in jail or of buying deer to replace those they had killed. They took the easier course and were billed by the state for nine imported Wisconsin deer. The fee was a tidy $810. The judge left court to witness the release of the deer.

What about that?

DIED–Aldo Leopold, 62, U. S. Forest Service 1909-27, for the last 15 years professor of wildlife management, University of Wisconsin, member Wisconsin Conservation Commission since 1943, author, dean of American wildlife scientists; died as he lived, for the preservation of the nation's resources, fighting a bad grass and brush fire near his summer home in Baraboo, Wisconsin.

REPORT (SHORT)–The legendary report on a railroad wreck–"Off again, on again. Finnegan"–has nothing on this one:

"While walking on sponge ice on part of Neversink River, with heel straps off in case ice was too rotten, broke through and came out without snowshoes, due to very swift water. J. H. Overbaugh."

Jim Overbaugh is Assistant District Game Protector, Kingston District, and he holds a lot of titles in the pistol shooting field and enough trophies and medals to fill a room. He can add another for brevity.

NEVER TOO OLD–Last winter reports began to circulate that Noah John Rondeau, the Hermit of Cold River Flow, was taking flying lessons. These reports got into the papers and eventually reached even the Hermit himself, who thereupon signed up for his first lesson. He may take more. He believes in measuring up to his publicity.

These reports recall that memorable day, two winters back, when this Department lofted Mr. Rondeau for the first time. It was a fine day, 22 degrees below zero at the Lake Clear airport, and we brought Mr. Rondeau from his nest on Cold River to Saranac Lake in a helicopter, and then to the Sportsmen's Show in New York.

We sure started something. Happy landings, Noah.

NEVER TOO YOUNG–The Saranac Lake Division of the Bureau of Law Enforcement offers the following story: Ray Burmaster, division head, says it proves that Game Protector Paul J. Benoit is getting somewhere with his program of conservation education:

Benoit recently gave a talk at the Vermontville School, in Franklin County. A few days later the teacher of Division 9, a Mrs. Tierney, presented her class with an examination in Social Studies, and one of the assignments was to name the four seasons of the year. Nine-year-old George Canty listed them as "Hunting Season, Fishing Season, Trapping Season, and Beaver Season sometimes".

AND NOW, THIS–Unusual requests pour not only into the Conservation Department, but into the mail boxes of legislators. Not too long ago Assembly Speaker Oswald D. Heck spoke before the Rondack Fish and Game Club of which he is a member. He told the Schenectady club the story of the man who called him, requesting a lower fee for a trapping license.

"It's for a blind man," said the caller.

A short time later Heck's 'phone rang again. Same man.

"Say," he said, "I've been thinking it over. Could you expand that lower fee to include blind hunters and fishermen?"

EDUCATION–A study intended to bring together by direct, co-ordinated on-the-spot observation the best practices in conservation education and science teaching–as developed in each of the 48 states–is now being conducted by a group of eight Cornell University graduate students.

The work is a continuation of similar surveys and investigations conducted at Cornell since 1925, findings of which were made available in 1938. Planned to be completed late this year, the survey is under supervision of Dr. E. Laurence Palmer, professor of science and nature education at Cornell. Dr. Palmer has had great experience in the field of conservation education, and the report of his group is eagerly awaited.

Out of the Past

Steamboat Days in the Adirondacks

THERE was a time, and not so long ago, when summer vacationers used to ride around the Adirondacks in steamboats.

The first to appear on any inland Adirondack water was the "Water Lily". On the Fourth of July, 1878, she chugged down the Saranac River on her maiden voyage and from her decks Sousa's Band, playing that summer at Martin's Hotel, serenaded the wilderness.

The "Water Lily" was built by William A. Martin, who up to that time had specialized in guide-boats, and Fred W. Rice, Sr. She was constructed at the suggestion of Mr. Martin's father as a means of handling the heavy traffic in tourists and merchandise between his hotel and Bartlett's at the carry between Upper Saranac and Round Lake. To provide adequate water for the "Lily" over this route, the Martins had to build a fairly substantial dam across the river.

The steamboat got a mixed reception from the very first. She was popular with the tourists, but guides complained that she cut into their business and frightened away fish and game, and the Martins received a good many letters containing threats that their craft would be sunk. Her doom, however, was sealed by a blow from another direction: one night the dam was blown up, and as a result there was no longer enough water to operate the "Lily".

The dam was rebuilt by the State in 1912, but the "Lily" had long since departed. In 1881 she was sold and taken to Lake Placid, where she sank at her landing shortly afterward.

VACATION DOPE – This Department publishes a number of circulars which will be useful if you are planning a vacation in New York. They are: "Public Use of the Forest Preserve", "Adirondack Campsites", "Catskill Campsites", "Lake George", "Adirondack Canoe Routes", "Trails to Marcy", "Catskill Trails" and "Lake Placid Trails". These circulars are sent free upon request.

You will also find informative articles in the back issues of this magazine. Our "Lakes Series" has covered Lakes Cranberry, Seneca, Oneida, Kensico, George, Chautauqua, Sacandaga, Champlain, Keuka, Ronkonkoma and Indian, in that order. Then there have been articles on "Our Public Streams" (with map), "Salt Water Resources", "Canoes and Campsites" (with map), "Bear Mt. Park", "Trails for Trampers", and "Campsite". As we said, you'll find these in your back issues–if you have them. If you haven't, with the exception of the August 1946, October-November 1946 and the June-July 1947 issues, back copies are still available for 20 cents each.

TRAPA NATANS–This year, armed with information and experience gained as a result of two years of water chestnut eradication in the Hudson River, the Department is preparing to go to work on the Mohawk. The water chestnut (*trapa natans*, water caltrop, Chinese cherry) is especially prevalent in the lower reaches of that river.

A nuisance aquatic plant, not native to the United States but introduced from Asia and first noticed in Collins Lake, Scotia, about 1884, the water chestnut has been extending its range ever since. Recent investigations have revealed it is now present in the Tomhannock Reservoir, Hoosick River, Round Lake, Saratoga Lake, Lake George, the vicinity of Geneva on Seneca Lake, Burden Pond in Troy, as well as the Hudson and Mohawk Rivers. Financed by Pittman-Robertson funds, eradication work has been in progress since 1946 with underwater cutters and chemical spraying from the air, but sportsmen and the general public are urged to co-operate in preventing the spread of the pest to other waters.

NO JOKE: Art Cook and Ed Maunton of Department's Lab examine the skulls required to be turned in with this spring's beaver skins.

CAMPS & TRAILS–Judging by the number of pre-season requests for information, the Bureau of Camps and Trails suspects that the facilities it maintains will be more extensively used this season than ever before. We therefore make note of the following recent developments:

¶ Campers on Lake George islands can obtain permits at three convenient points. A Ranger on Cooper's Island issues permits for the islands north of the narrows; a Ranger on Long Island, for those south of the narrows; and the caretaker on Long Island for locations below. Long Island, largest in the Lake, will not be open for camping but picnickers will be welcome. Fireplaces have been provided.

¶ A new campsite is available at Lake Durant, near Blue Mountain Lake.

¶ The campsite at North Lake in the Catskills will be open until September 30. All other campsites will close shortly after Labor Day.

¶ A man will be on duty to maintain the Indian Head and Hunter Mountain trails in Greene County, and another for the Slide Mountain and Panther Mountain trails in Ulster County.

¶ Three new Adirondack trails, connecting the public highway between Lakes Sanford and Henderson with the Indian Pass Trail, the Flowed Lands Trail, and the top of Mt. Adams, will be open this year. A parking space is available near their origin on the highway, and the trails will be marked with Calamity Brook and Indian Pass markings. They lead through country from which the public has been excluded for more than 50 years, but which is now open as the result of an agreement executed by Commissioner Duryea, on behalf of the State, and the National Lead Company, owners of the property.

¶ Hikers will find a new caretaker's cabin a quarter of a mile south of John's Brook Lodge at the junction of the Ranger and Marcy trails.

¶ As more extensive use than ever is anticipated, canoeists are urged to carry their own shelter on the Old Forge-Saranac Lake route despite the fact several additional lean-tos have been erected in the Raquette Lake and Long Lake sections. (Canoe liveries along the route have a complaint against the Army type packsack with its metal frames. Canoes develop bulges if the packs are left wedged in for any length of time.)

FOX-PHEASANT–An important activity of the pheasant research project this spring was the determination of male pheasant abundance on the two areas involved in the Seneca fox-pheasant experiment. During the latter part of April, each cock pheasant establishes a "territory" within which he crows. For about the first two hours after sun-up he crows on an average of every two or three minutes. This characteristic affords an excellent opportunity for a "listener" to count all cocks within hearing.

One hundred listening stations were established on the Seneca County area, where foxes have been reduced, and an equal number on the Ontario-Yates area where foxes are still abundant. From these stations, a total of 336 crowing cocks were heard on the Seneca area and 141 on the Ontario-Yates area, or nearly two and a half times as many on the trapped area as on the untrapped.

Those who have been following the experiment, however, will remember that very nearly the same ratio existed a year ago before the trapping program was begun. It is believed, therefore, that no significant change in relative spring abundance has resulted from the removal of foxes from the Seneca area.

POLLUTION – The Joint Legislative Committee on Interstate Cooperation, Harold C. Ostertag, chairman, has announced several new developments in the Committee's drive to solve the pollution problem in New York's waters.

State planning aid in the construction of sewer systems and sewage treatment plants is now available to the cities, towns and villages requesting it. This form of State aid was continued by the 1948 Legislature, and financial aid to the extent of two per cent of cost of construction is available to the communities until April 1, 1949. A model sanitation code, for localities where legal groundwork for pollution control is necessary, is being distributed.

Under study is legislation providing for the establishment of a State pollution control board with authority to clean up the waters of the State. This legislation, submitted primarily for study purposes late in the session of the 1948 Legislature, is now being scrutinized by local officials and others who might be affected by it, and will be resubmitted in final form and pressed for enactment in the 1949 session. The pollution control board, as presently planned, would function within the Department of Health. It would be comprised of the State Commissioners of Health, Conservation, Commerce, Agriculture and Markets, and the Attorney-General.

FOREST PRACTICE ACT – Good forestry is becoming popular; more and more applications are being received from woodland owners who want assistance under the Forest Practice Act.

This fact was brought out at the recent meeting of the State Forest Practice Board held in Arcade, Wyoming County, on April 28. The meeting was in accordance with the policy of the Board to hold its summer conclaves in the field where the business meeting can be followed by inspection of forestry operations actually being carried on. At the Arcade meeting, for instance, the group inspected the Erie County forests as well as some privately-owned woodlots where management plans had been prepared under the Forest Practice Act by this Department's Foresters.

The Forest Practice Act has been in effect just about two years. The progress made to date may be summarized by saying that since the start of the program, approximately 3,000 requests for service have been received by the Department. More than 2,200 woodlots have actually been visited in the field, and 724 owners have signed co-operative agreements under which they have agreed to manage some 424,000 acres in accordance with approved forest practice standards for their respective districts. Three hundred co-operators have already received management plans covering 50,000 acres.

The Forest Practice Act was amended in 1947 to authorize the Conservation Department to furnish co-operators under the Act with free forest planting stock from State nurseries.

SNAKE IN THE GRASS–The Warrensburg Hatchery loses few fish to predators. There was a time when raccoons, blue herons and snakes took a fairly heavy toll, but covers for the troughs solved the 'coon and heron problem, and wire mesh screens were installed to keep out the snakes.

There was a slip-up, however, one day this spring. A spotted adder (harmless) slithered out of the grass to one of the troughs containing brook trout fingerlings. Poking its snout into the water, the snake began to flick its tongue, and so attracted a number of fingerlings to which the flashing tongue apparently represented a meal.

The joke was on the trout, of course. Ken Nichols, foreman of the hatchery, reports that he stood in amazement and watched the snake eat five of them before he stepped in and broke up the party.

ERRATA–In our Summary of New Conservation Laws (insert, April-May issue) it was stated that disabled veterans of World Wars I and II, disabled at least 25 per cent according to Veterans' Administration standards, could without license take fish, birds and quadrupeds, except deer, in accordance with the conservation law. This was in error; this particular provision did not become law. However, until July 1, 1949, active service men have this privilege, but in exercising it they must be in uniform or have furlough or leave papers and identification tags along.

Our condensation of the law pertaining to open seasons on fur bearers should have read that animals held captive in traps shall be immediately removed at the time the trap is *visited* by the trapper. The word "baited" was used in place of "visited."

DIED–With our copy already at the press, word reaches us of the sudden death of William C. Adams, for the last 17 years Director of our Division of Fish and Game.

Mr. Adams' record as a conservationist is of long standing and wide reknown. Before coming to New York he worked 18 years for the Commonwealth of Massachusetts, and in 1919 became the first Director of Fisheries and Game in that state. For many years he was active in the International Association of Fish and Game Commissioners, and was one of the original proponents of the Migratory Bird Treaty. In this State, he will be best remembered for the many younger men –now dispersed throughout the nation –who trained under him and today carry on his work.

DO YOU KNOW YOUR LAWS?

More About the Possession of Fish

IN our last issue we devoted this space to the new law, effective July 1 of this year, which says in part: *A person shall not possess on waters of the state nor on the shores thereof, any species of fish in excess of the number of such species which may be legally taken by a person in one day; provided, however, that this prohibition shall not apply to a person in possession of fish legally taken in a net licensed by the department.*

Since our publication of this law, we have received a great many inquiries as to its intent and proper interpretation. These inquiries may be summarized as follows: (1) Does the new law supercede the law which permits the possession in any number of fish legally taken? (2) May fish legally taken be possessed in any number in cottages along the shores of waters of the State? (3) What is the general purpose of the new law?

To answer these questions: (1) Neither law supercedes the other; both are in effect after July 1. Considered together, they state that *except on waters and along the shores thereof*, fish legally taken may be possessed in any number until July 1, 1949. (2) The new law will be intelligently enforced and will not be invoked to harry cottage owners or persons inhabiting permanent dwellings along shores. (3) The purpose of the new law is to enable law enforcement authorities to apprehend violators who take in one day more than the daily legal limit of fish. In the past, they could claim that their catch represented the take of two or more days.

Letters to the Editor

WRITE SOON

Your editors, in one respect at least, are just like other people: they like to get mail.

They also feel that since this is your magazine, it is only fair to provide you with space to say what you think of it—space to criticize, commend, or inquire. Such letters as are of general interest will be published just as they come in —as many as we can find room to print.

So write soon: The address is: Editor of the *Conservationist*, Conservation Department, Albany 7, New York.

THE "HAVES" AND "HAVE NOTS"

Dear Sir: The question raised by E. J. Lenhard of Rochester in the December-January edition of the *Conservationist*, regarding the long pheasant season on Long Island and wondering where all the birds come from, seems to be on the minds of many up-State sportsmen. Regardless of the length of the pheasant season, it doesn't mean that we have a larger supply of pheasants or get more from the State, as the truth is that we have far fewer and get fewer from the State for stocking than the up-State counties have and get.

If any one has any grounds for complaint it's the Long Island sportsmen. Just compare our meager supply and variety of fish and game with what up-State sportsmen have available. We have only a 60-day season on cottontail rabbits, whereas in most up-State counties the season runs from the 3rd Monday in October to January 31st, or about 6 weeks longer. In addition you have varying hares to hunt for, whereas we have none on Long Island. You have an open season on bear and deer, whereas we have none. You have enough grouse or partridge to make hunting them worthwhile, whereas there are probably not over a hundred grouse on Long Island.

When it comes to fish, we are even more unfortunate. We have only a few small streams, which after a few miles run into salt water and contain only small, hatchery grown trout. These streams, as a rule, are too short and too shallow to permit natural reproduction, so we have no natives. We have small pickerel, a fair supply of largemouth bass and a few ponds containing smallmouth bass which rarely exceed 2 pounds in weight.

Wm. A. Wesche, Secretary
Fresh Water Anglers of Long Island, Inc.

● *All very true. But at the same time, how many fish in the sea?—Editor*

WOMEN ONLY

Dear Sir: This letter is to announce the formation of a women's conservation club in Central New York. A group of some thirty women met last Monday, April 19th, and elected temporary officers, as follows: Bernice Miller—President; June Scusa—Vice President; Elizabeth Benedict—Treasurer; Mabel Merrill—Secretary.

The club rooms will be at Three Rivers, New York. The constitution and by-laws read: "The object of such a club shall be to wit; hunting and shooting for amusement and the encouragement of the same, and the enforcement of the laws for the preservation of game and fish."

The meeting nights will be the third Monday of each month and the annual meeting will be the third Monday in January of each year. The dues are two dollars a year, with a fifty cent flower fund for deceased members or the immediate family. Awards for the largest fish, in certain species, will be made at the end of the year.

Mabel Merrill, Secretary, Liverpool

MUSKRATS

Dear Editor: I am interested in pen-raising muskrats and would like if possible some information on the following questions: (1) I believe I would need a license to raise them. Am I right? And if so, how much would it cost me? (2) Could you furnish me information on where to buy some? I have looked in vain for advertisements for them.

Wm. Haponski, Ilion

● *A form letter has been sent you describing the two types of license under which the rearing of fur bearers may be conducted in this State. Mr. Frederick G. Roehr, 43 Chestnut Street, Rensselaer, has been quite successful in rearing muskrats and it might pay you to contact him for information and price. For your further information, we also enclose a list of the licensed fur breeders in New York—Editor*

JUSTICE OF THE PEACE

Dear Editor: I thank you for your acknowledgement of my two postcards regarding material in the December-January issue of the *Conservationist*. You say "a fairly stiff deer violation PENALTY" is in the offing. And again I say to you unless you mean CRIMINAL PENALTY, to H—— with penalties. QUIT SELLING GAME under compromise and stipulation to those who can afford to pay the price. Charge game hogs with a crime, with a record of conviction against their names, and allow us Justices to lock up repeaters. Forget that almighty dollar for the fund and you will lick the cutthroat. You know and I know and every Inspector and every Warden knows that we have them, and who many of them are, and that most of them are in a financial position to compromise and thus escape the criminal mark. Incidentally, in my humble opinion, many of the violations under the Conservation Law should be offenses or infractions, quasi criminal, instead of misdemeanors as now declared.

Ralph Hutchings, Binghamton
Justice of the Peace

● *See April-May Conservationist for the new deer-jacking law. It provides for a prison sentence, and is now in effect.—Editor*

ONE MAN'S MEAT

Dear Editor: To save your time and with the hope that they may cause some good, I have listed below some of my ideas on improving conservation of our wildlife.

(1) Formulate an artificial lure season on trout. (2) Raise size limit on trout. (3) Take the present 16" size limit off striped bass. What good is a fish hooked deep with a large heavy hook then thrown back to suffer and rot? (4) Prohibit the sale of striped bass. Fish taken in nets and thrown back have an excellent chance to survive. (5) Stop the stocking of hatchery fish for the rod and increase the stocking of wild-trapped and transferred fish in limited numbers for breeding purposes. (6) Stop the stocking of pen-raised game and provide more shelter and food to permit a substantial natural increase. (7) Provide a progressive program of stream improvement and increase natural food supply. (8) Close the hunting season in Nassau County, Long Island. (9) Prohibit the waste of game and fish, protected by law, taken for the "fun of it" and left to rot. (10) Require everyone who hunts with a semi-automatic rifle to purchase a special permit. The permit should cost five or ten dollars.

I believe that all of the suggestions that I have listed to be both practical and workable. Only a progressive, far-reaching, long-range conservation program can save our fish and game.

John O'Donnell, Jr., Brooklyn

● *With the last sentence, at least, no argument at all.—Editor*

"MILLION DOLLAR RACKET"

Dear Sir: I am utterly dismayed to note that the license fee to hunt and fish has been raised to the astronomical figure of $3.50. This is very wicked and inflationary and how the hell do you expect us to hunt and fish at such exorbitant prices, that is what I want to know.

The foregoing paragraph seems to me to be typical of what the boys are thinking. Which shows that they aren't thinking.

I go fishing many times per year. Here is the box score of one typical trip:

Travel	$29.50
Food	17.50 (starved 3rd day)
Bait	8,479,281.47
Fish	free (ha! ha!)

Ah! one small item not listed. To go foolishly wasting my time I was forced to pay the confiscatory fee of $2.25. Now alas, to learn that it has been raised to $3.50. You can readily see that N. Y. State is really raising hell with us poor sports.

Sarcasm aside, however, I'm in the lowest income bracket, but I certainly would not object to a license fee of $10 or more, when I consider the other expenses of the sport. And I cannot understand anyone who objects to paying $3.50 for a whole year of hunting and fishing in New York State.

R. A. Flynn, Marcellus

● *$3.50, plus 25 cents to the issuing clerk. You forgot that angle of the racket. Bait seems to be going up a trifle.—Editor*

TO MR. WINCOWSKI

Dear Editor: I have in hand a copy of a letter sent to you for publication by Leo Wincowski. He states that there was game enough on the trapped area (see Letters, April-May issue) to gladden the heart of every sportsman. Yet, in your Oct.-Nov. issue he states that the test was designed to give every bird hunter in the State a dirty deal and claims it is a racket that they are not going to get away with.

What kind of a racket is it that saves the sportsmen 24 hens and 11 cocks that in four or five years should produce several hundred pheasants for the sportsmen?

Mr. Wincowski, in another letter to me, tells me that the Conservation Department, for good reasons, is bending over backwards for support from people like myself. Well, Mr. Wincowski, here in my club we still have faith in a Department that sends us 42,000 trout, 147 full grown pheasants and a good number of partially grown birds in one year on a lousy $2.25 license fee.

Harry Arnold, President
Cambridge Fish and Game Club

FOREST AND STREAM

Dear Sirs: Thanks for a very swell magazine, and now for my gripe. The Conservation Department has a gang of men working on the State land around here (of which there is a large amount). I understand they are improving the forest but I fail to agree with all of their practices. It looks to me as though they went too far in cutting the large beech and hollow trees which are used by 'coon, squirrels and other animals for food and den trees.

Just a word on another of my observations; in the past several years I have returned to some of the trout streams where I fished as a youth and I am disturbed by the absence of log jams. There seems to be nothing but second growth along the streams and no old trees to fall in and make log jams. These streams used to have numerous log jams and good trout holes, but now the water just rushes right along and the only place for the trout is under an occasional tree root or rock.

J. R. Rowe, Richland

● *We think you would find, on closer investigation, that the men who improve our timber stands strike a pretty neat balance between good forestry and practical game management. Den trees are usually also "wolf" trees (trees which crowd out more desirable species) but even so enough of them are usually left standing to provide adequate housing and feed for local wildlife. As to the natural trout cover you mention, probably a lot of it has washed away in high water. Why not replace it with a little permanent stream improvement work; lots of sportsmen are getting together and going in for that sort of thing, and it works.—Editor*

FISH POND

Dear Editor: Possibly you may have some suggestions regarding the following matter, which may also be of general interest.

It concerns the construction of a lake on my farm. The main question—in order to have a satisfactory lake is it essential to have a stream that flows *all* the time? In dry spells such as last season one could count on very little inflow, except possibly a small amount of seepage. The area to be flooded is a clay soil with swampy bottom. Underlying rock formation is shale and I am told that it should be reasonably water tight. Location of the property—southern New York.

L. H. Thorne, Brooklyn

● *Warm water species such as bass and bluegills would need only a sufficient flow into the pond to maintain the water level. Trout, on the other hand, would require a flow that would not only maintain the water level but which would maintain a temperature not in excess of 68 degrees F. In warm water fish ponds, you must allow for an evaporation of about five gallons per acre on hot summer days, and in planning such ponds all calculations should be based on hot, dry periods.—Editor*

SPRING, AND THE MAGAZINE

Dear Editor: Spring arrived up here exactly on March 20. Yesterday noon the ice went out and the river has been running free and sparkling in the sunshine. The robins sang yesterday and today blue birds are looking at their old apple tree.

We are all looking forward to future issues of the *Conservationist*. (1) It is attractive. There is enough white space so that pictures catch the eye and print is very legible. The absence of advertisements is the greatest relief to one who takes several magazines and fights through distracting newsprint. The paintings are beauties. Somehow I see those fish as fish, not something that must be caught. (2) We read everything from the first page on. Every bit of chat on the editorial page is like the really cordial greeting at the front door. The informal friendly touch is in many of the pages. (3) "1/6th of the State" has been splendid as well as interesting. (4) I have visited Chautauqua and Keuka, and to read about them on snowbound winter nights was a treat. Ronkonkoma was new, but now we know about it. Can hardly wait for Indian Lake. (5) The hunting trip of Homer and Mr. Block was refreshingly scornful and warmly appreciative.

Like the "Readers Digest" and the "National Geographic", any number can be picked up and reread with pleasure and fresh interest. We thank you all!

Marian I. Little, North Creek

STOCKING LISTS

Dear Editor: I am interested in any information you can give me regarding stocking of trout in the Catskill Mts. We have a cottage between Arkville and Margaretville, and I am particularly interested in this area.

J. G. Ringwalt, Jr., New York

● *We are sending lists of waters stocked in Delaware and Sullivan counties.—Editor*

LONG ISLAND TROUT

Dear Editor: The writer would appreciate information regarding brook and lake trout fishing on Long Island.

R. S. Cole, Long Island

● *There is no lake trout fishing on Long Island. An attempt was made to stock Lake Ronkonkoma, but there was no success because of poor oxygen near the bottom. As for brooks, the following were stocked last year: East Meadow Brook and Lower Twin Pond (Hempstead); Massapequa Reservoir and Creek (Oyster Bay); and Mollineaus Pond (Hempstead). In fishing the Massapequa Reservoir and Creek you're also apt to run across some browns, as these two areas have been stocked with them too. Long Island is not our best trout habitat by any means because of low water fertility; hence much of the Department's stocking there is done with legal size fish.—Editor*

FOREVER ALDER?

Dear Sir: Ralph Smith has interesting comments on alder—page 24 of the April-May number of the New York State *Conservationist*.

In my limited observation of alder thickets in New York State (25 years), I have never seen them function as a nurse crop for better trees. "Once an alder thicket, always an alder thicket" is the way the shrub behaves in my experience. Furthermore, alder is confined to poorly drained areas and even if it were a beneficient nurse tree, what satisfactory hardwood would survive in such conditions?

Prof. J. A. Cope, Ithaca

● *If my comments on alders have encouraged such eminent authorities on forest management as Professor Cope to take a second look—from a different view point—at the alder thickets on our abandoned uplands (not all of which are swamps), I am humbly grateful.—Ralph Smith*

OUR FISH PLATES

Dear Editor: The two biological surveys of the Upper Hudson and Raquette watersheds do not contain color plates of the brown and rainbow trout. Could you please advise which survey would contain these color plates?

John C. Brode, Kingston

● *The steelhead rainbow trout may be found on Plate 1 of this Department's Biological Survey of the Oswegatchie and Black River Systems. Plate 2 of the Survey of the St. Lawrence Watershed will give you the brown.—Editor*

YOO HOO, MR. McLANE

Dear Sir: How come there isn't more airplanes used in fighting forest fires? There has been some trips made but you don't hear much about it. Having fought several forest fires I have been interested in modern methods. On crown fires why can't airplanes be used to spray with either chemicals or water. On ground fires with all our precision bombing, we could drop water or chemical bombs. Cost of operation would not exceed cost of timber we are losing every year and wildlife. Would like to hear from someone of authority on this.

1948 fishing and hunting license says "and it shall be exhibited on demand of any person." Is this a new law—when did it pass? I think licenses should be shown on request from Game Wardens, Rangers and other law enforcement agencies—not to every Tom, Dick and Harry.

Jack (?), Ilion

● *Jack was smart to leave off his last name. Even so, Department's Chief Pilot Fred McLane (who told how we use our five planes in fire-fighting, in our last October-November issue) is ready to sack the topless towers of Ilion on the chance Jack is still there. As to showing licenses, that law has been on the books for over 30 years. The idea is that every man is a Game Protector, and we think it's a pretty good idea.—Editor*

CURRIER & IVES, BY TAIT

Dear Editor: Would it be possible to obtain a copy of your February-March issue? I understand there is a Currier & Ives print, "Fishing Through the Ice on Chateaugay Lake", on the cover. The artist who painted that picture, Mr. Tait, stayed here (The Banner House) while he was painting it and several others.

Mrs. A. M. Chase, Chateaugay

● *Copy sent. We like to get background material like this.—Editor*

SUGGESTION

Gentlemen: Here is a contribution for your Suggestion Box: To have all sportsmen's clubs in the country open their meetings with the Salute to the Flag, and close same by all repeating the Conservation Pledge. A fine editorial could be written pointing out the many benefits resulting from such procedure, and I sincerely hope that you will lend your aid in making my suggestion a national practice.

Many sportsmen's clubs use either one or the other but the Beacon Fur, Fin and Feather Association, of which I am an officer, is the only one I know of which uses both.

Harold D. Smith, Vice President
Beacon Fur, Fin and Feather Association

WIRE LINES

Dear Editor: Will you please advise me whether or not there is a law governing the use of wire lines in fishing for game fish. I know that in fishing during the summer months for lake trout, a wire line has to be used in order to get the line down where the fish are. However, I have discovered that a number of people in and around the Thousand Islands use wire lines in trolling for muskellunge and to me, this seems most unsportsmanlike and something that should be forbidden by law.

Arthur D. Holmes, New York

● *To date, there is no such law.—Editor*

PHOTO CREDITS

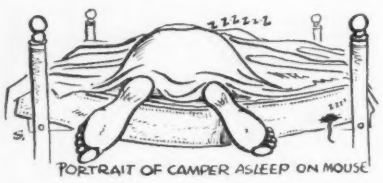
First cover, A. F. Tait; second cover, P. W. Fosburgh; page 2, U. S. Soil Conservation Service; 4, 5, 7, 14, 25, Doug Finch; 11, E. W. Littlefield; 12, Arthur Palme; 13, Clay Perry; 22, 23, U. S. Bureau of Entomology and Plant Quarantine; 24, E. J. Stein, N. Y. S. Museum; 28, Clayt Seagears; fourth cover, Ellen Edmonson. (Pilot for aerials, Fred McLane).

HOW TO DRAW A MOUSE

IT IS fun to draw a family of live mice. First you get the mice. Then you get out your drawing stuff and spread it around on a large flat surface—like the dining room table. Then you place the mice in the desired position and go to work.

It is easy to fill up all the space on your drawing paper because you can put in as many little mice as necessary and still be within the allowable biological limits for this species. But it is necessary to be at least slightly accurate especially if you are drawing them for a magazine like this which is supposed to show only the real McCoy. You see, if you draw ears too short and tails too long you end up with another kind of mouse.

Well, for this issue we wanted to show some kind of animal associated with vacations. Mice are about the closest furry animal to vacationists. In fact more vacationists than you think



PORTRAIT OF CAMPER ASLEEP ON MOUSE

sleep on mice during the whole two weeks.

The camp mouse is the white-footed or deer mouse. It is also known as the wood mouse but not when it is in camp. So we settled on the white-footed mouse (as carefully as possible because they leave a stain.) Then came the fascinating pastime of drawing the mice.

We came by our models easily. The boys out at the Game Research lab. found a whole family in a nest mostly made out of deer hair and pheasant feathers—which does not mean the mice knocked off the deer and pheasants to get building materials. Anyway we brought the mice home in an aquarium to serve as models. This was all right until a couple got out and went down a hot air vent. Things weren't too good in the home department either because we already had the following orphaned baby models in stock: 3 screech owls, 2 hawks, 4 'coons and 2 fawns.

The trouble out at our house is we don't have time to make pictures of them as soon as these ravenous things arrive from far-flung points, and Mrs. S. knows from long experience that bottle-feeding and meat-mashing chores are likely to be overwhelming. So she just gave off a low moan when we put the mouse aquarium down on the dining room table. That night we started to draw baby mice. That's when another went down the air vent. But there were still four left and what the heck, they all look alike anyway. All but Ma Mouse. She was a perfect 62. Very fat (see picture).

THESE mice were stinko models. They kept hiding in their nest. So we removed the nest. That made them very unhappy—and there's nothing more active than a mouse that's not happy—especially when an aquarium is jumping with mice all unhappy at the same time.

After a couple hours of chasing mice around with a drawing pencil we got the hang of how to handle it. You draw a tail in the desired space on the paper. Every so often a tail in that position will become attached to a mouse which, less often, will be in the required pose. It was as simple as that. But just when we started on the first mouse by virtue of this new technique, one of the escapees reappeared up the hot air vent and was immediately given chase by our cocker spaniel, who had been feigning sleep nearby. At this point the four infant 'coons pulled their dinner whistles. Gracious, we thought,

things are beginning to get thick. But reassured by the feeling that the mice would be worn out by jumping by the time the 'coons were fed, we put the milk to warm.

It was now 2 a.m. and the drawing deadline was getting nigher and nigher. [Brother Seagears, that whizzed by weeks ago—Ed.] By now another mouse had appeared up the vent. The first one had gone off and hidden, probably inside the works of the refrigerator on account of the dog was drooling by the motor hole. The mice in the aquarium were still jumping like mad. So, since we were at work on the 'coon dinner business and had lots of milk here and there, we poured some into the aquarium, thinking maybe Ma Mouse might be grateful for a lift.

Finally, after considerable nipple trouble, the 'coons were tucked back in bed. The march now would have been resumed on the mice, except that a querulous crying began outside. It sounded almost exactly like the 'coons but no such luck. It came from a big white pine out in back. Sure enough, the owls had escaped.

Now it isn't often you get little screech owls. It is even less often you *want* little screech owls. The mother of these, the Game Protector said, had gotten snarled up in somebody's badminton net and passed out and the kids needed a home. Secretly wishing we had more badminton nets, but wanting the owls for exhibit purposes, we set

up a 20-foot extension ladder against the pine and after some modest yodeling the owlets were recaptured in a fish net, fed some choice fish filets (meant for us) out of the refrigerator (in which Mouse C or F was still among the wheels), and the task at hand was resumed. The mice were filled with milk and by 3:20 a.m. were asleep. They were quiet for sure. But a quiet mouse is a poor drawing model. It looks like a golf ball with fuzz just waiting for a good spank in the pants with a No. 3 iron. For some mice, this might be a good idea.

WE got our break unexpectedly: Mouse A or thereabouts emerges slowly out of the air vent. He staggers across the floor, obviously overcome by a combination of soot and oil burner exhausts, and for ten minutes he sits in one place washing and assuming other postures necessary for a drawing. All the little mice in the picture were made from that one subdued mouse.

Three hours later, so help us, Ma Mouse produced seven more offspring.

We like fawns. They slept through the whole business.

—CLAYT SEAGEARS

NEW YORK STATE Outdoors Map

OF THE WORLD'S LARGEST STATE SYSTEM FOR PUBLIC RECREATION & CONSERVATION

Published in 1948 by the

STATE OF NEW YORK

THOMAS E. DEWEY, Governor

CONSERVATION DEPARTMENT

PERRY B. DURYEA, *Commissioner*
J. VICTOR SKIFF, *Deputy Commissioner*

DIVISION OF CONSERVATION EDUCATION, ALBANY

Map drawn by Clayt Seagears

LEGEND

- STATE PARKS
- STATE CAMPSITES
- GAME MANAGEMENT AREAS (DOACRES)
- STATE LANDS ADMINISTERED BY THE CONSERVATION DEPT.
- GAME FARMS
- FISH HATCHERIES
- FIRE TOWERS (BLANK MT.)
- DISTRICT OFFICES (??)
- FISHING RIGHTS

0 10 20 MILES

STATE PARKS

(other than Adirondack and Catskill)

New York State's vast network of 77 State parks brings varied recreational opportunities within reach of every community. They range in size from Allegany (56,947 acres) to St. Lawrence River islands, accessible by boat only. The parks are used by more than 12,000,000 persons annually (Jones Beach alone provides parking space for 15,000 cars at a time) and encompass many of the State's natural wonders. Most have camping and bathing facilities and are developed extensively for a variety of both Summer and Winter sports. See symbols. The entire system of ten park regions is administered by the Department's Division of Parks through individual Park Commissions except that the Adirondack and Catskill areas, in addition to Thacher Park, are administered by the Department's Division of Lands and Forests. For information, write the Division of Parks, Conservation Department.

(NOTE: Several small parks not listed)

Allegany (56,947 acres) C-P-B-R-F....3-J
Battle Island (235 A.) G-R....9-F
Bear Mt. (see Harriman—B.M.)....3-CD
Beaver Island (584 A.) B-P-R....3-G
Belmont Lake (348 A.) P-R....5-E
Bethpage (1,390 A.) P-R-G....5-E
Blauvelt (536 A.) bridle trails....3-D
Buckhorn Island (618 A.) P....3-G
Burnham Point (7 A.) C-P-B....9-C
Buttermilk Falls (595 A.) C-P-B....8-I
Canoe-Picnic C-P-B....9-C
Captree....5-E
Cayuga Lake (188 A.) C-P-B-F-R....8-G
Cedar Island C-P-B....10-C
Cedar Point (48 A.) C-P-B....9-C
Chenango Valley (928 A.) C-P-B-F-G-R....10-J
Chittenango Falls (122 A.) P....10-G
Clark Reservation (225 A.) P....9-G
Cuba Reservation (650 A.) B-P-F....4-I
Devil's Hole (42 A.)....3-G
DeWolf Point (10 A.) C (no tents) P-B....10-C
Fahnestock Memorial....4-C
Fair Haven Beach (816 A.) C-P-B-F....8-F
Fillmore Glen (857 A.) C-P-B-R....9-H
Fire Island (800 A.) P-B-F-R....5-F
Fort Niagara....3-F
Gilbert Lake (1,569 A.) C-P-B-F)....12-H
Gilgo (1,223 A.) undevel....5-F
Grass Point (15 A.) C-P-B....10-C
Green Lakes (744 A.) C-P-B-R-G....10-G
Hamlin Beach (600 A.) B-P-R....5-F
Harriman-Bear Mountain (39,168 A.) all facil....3-CD
Hecksher (1,518 A.) P-B-R....5-E
Hempstead Lake (903 A.) P-R....4-E
Hither Hills (1,755 A.) C-P-B-F-R....8-D
Hook Mountain (653 A.) P-B-R....3-D
James Baird (580 A.) undevel....4-B
Jones Beach (2,413 A.) B-R-shows....4-F
Kring Point (39 A.) C-P-B-F)....10-C
Lake Erie (240 A.) C-P-B....2-I
Lake Taghkanic (750 A.) C-P-B-F....15-J
Letchworth (5,920 A.) C-P-R....5-H
Lewiston Heights....3-G
Long Point (12 A.) C-P-B-F....9-D
Mary Island C-P-B....10-C
Massapequa (595 A.) undevel....5-E
Mills Memorial (190 A.) P-museum....15-J
Montauk Point (158 A.) P-R-F....8-D
Newtown Battlefield Res. (318 A.) C-P....8-J
Niagara Reservation (425 A.) P-R....3-G
Norrie (941 A.) (323 A.) C-P-B-F-R....15-J
Orient Beach (342 A.) P-B-F....7-D
Rudd Pond (200 A.) C-P-B-F....15-J
Selkirk Shores (631 A.) C-P-B-F....9-E
Stony Brook (481 A.) C-P-B-F....9-G
Stony Point Battlefield (historic)....6-H
Storm King (1,057 A.) P....3-C
Sunken Meadow (520 A.) P-B-R....5-E
Taconic (6,000 A.) C-P-B-F....15-J
Tallman Mountain (171 A.) C-P-B....3-D
Taughannock Falls (535 A.) C-P-B....8-I
Thacher (John Boyd) (1,010 A.) C-P-R....14-H
Treman (R. H.) State Park (833 A.) C-P-B-F....8-I
Valley Stream (107 A.) B-P-R....4-E
Verona Beach (520 A.) P-B-F....10-F
Watkins Glen (540 A.) P....8-I
Watterson Point P-B-F....10-C
Westcott Beach (277 A.) P-B-F....9-D
Whirlpool (109 A.) P....3-G
Wildwood (395 A.) C-P-B-F....6-G

C (camping); P (picnic); B (bathing); F (fishing); R (restaurant); G (golf).

FOREST PRESERVE

The lands within the Adirondack and Catskill Parks are owned both privately and by the State. The State-owned part (shown in green) is called the Forest Preserve and is set aside by State Constitution as wild lands open to the public for hunting, fishing, camping, etc., and is administered by the Department. The Adirondack Forest Preserve totals 2,177,476 acres; the Catskills 232,422 acres. The Adirondack park is largest in the U. S. —8,555 square miles. See list of circulars.

REFORESTATION AREAS

All the land shown in green outside the Adirondack and Catskill parks represents the State's 513, 497 acres of reforestation areas, on which more than 77 million trees have been planted to date under a vast continuing program to acquire and to reforest previously idle land on a multiple use basis. Public hunting and fishing are permitted. See list of circulars.

STATE CAMPSITES

Thirty-one free public campsites providing more than a million man days of camping are maintained in the Adirondack and Catskill areas. Fish Creek Ponds, the largest, has 400 individual sites with an average annual registration of 40,000 campers. Campsite permits are issued on the spot for two-week periods. These may be renewed depending on campsite demand. The Conservation Department does not have equipment for rent nor is electricity available for trailers. The sites have water, sanitary and garbage collection systems, tables and fireplaces. Many have bath houses and life guards. Virtually all are truck-serviced with groceries, milk, ice, etc. In addition to campsites listed on the map, the Department provides individual sites on 57 of the State-owned islands on Lake George, for which it maintains a post office, store and telephones at its Glen Island headquarters. See list of circulars.

Beaverkill, B-F....12-J
Caroga Lake, B-F-BT....13-G
Cranberry Lake, B-F-BT....12-C
Crown Point Res., B-F-BT....15-D
Cumberland Bay, B-F-BT....15-B
Devil's Tombstone....14-J
Eagle Point, B-F-BT....15-E
Eel Weir, F-BT....11-B
Eighth Lake, B-F-BT....12-E
Fish Creek Ponds, B-F-BT....13-C
Golden Beach, B-F-BT....13-D
Hearthstone Point, B-F-BT....15-F
Lake Durant, B-F-BT....13-D
Lake Eaton, B-F-BT....13-D
Lake Geo. Bat'gr'nd., B-F-BT....15-F
Lewey Lake, B-F-BT....13-E
Meacham Lake, B-F-BT....13-B
Meadowbrook, F....14-C
Moffitt Beach, B-F-BT....13-E
North Lake, B-F-BT....14-I
Paradox Lake, B-F-BT....15-D
Pixleys Falls....11-F
Point Comfort, B-F-BT....13-F
Poke-O-Moonshine....15-C
Poplar Point, B-F-BT....13-F
Rogers Rock, B-F-BT....15-D
Sacandaga, B-F....14-F
Sharp Bridge, B-F....15-D
Whetstone Gulf....11-F
Wilmington Notch, F....14-C
Woodland Valley, F....13-J

B (bathing); F (fishing); BT (boating)

LIST OF FREE CIRCULARS

.... (Write the Conservation Dept., Albany)

PUBLIC USE OF THE FOREST PRESERVE
ADIRONDACK CAMPSITES
CATSKILL CAMPSITES
LAKE GEORGE (with map)
ADIRONDACK CANOE ROUTES (with map)
THE TRAILS TO MARCY
CATSKILL TRAILS
LAKE PLACID TRAILS
MT. VAN HOEVENBERG BOB RUN
FOREST PLANTING IN N. Y.
N. Y. STATE'S REFORESTATION PROGRAM
THE N. Y. FOREST PRACTICE ACT
SYLLABUS OF FISH AND GAME LAWS
N. Y. STATE CONSERVATIONIST ($1 yr.)

FISH HATCHERIES

Twenty-two State fish hatcheries produce four varieties of trout and salmon, muskalonge, bass and several other species for stocking more than 40,000 miles of streams and several hundred ponds and lakes open to public fishing. The output is the heaviest produced by any state system. The Caledonia Hatchery, founded by Seth Greene in 1870, is the nation's oldest. The Department also maintains several roving fish salvage crews which net fish from waters closed to public fishing for stocking elsewhere. An extensive fish research laboratory is at the Rome Hatchery. A marine fisheries and shellfish laboratory is at Freeport.

Adirondack, S-LT-BT-W....13-C
Bath, BT-BrT-RT-LT....4-G
Caledonia, RT-BrT-LT....5-G
Catskills, BT-BR....13-J
Chateaugay, BT-RT....14-A
Chautauqua, M-SB-LB-CB....2-J
Cold Spring Harbor, BT-BrT-RT....4-E
Cortland (research only)....9-H
Crown Point, BT-P....15-D
Dunkirk, P-LH....2-I
Johnstown, BT-BrT....13-G
Lake George, BrT-LT....15-F
Lily Lake, BT-BrT....10-I
Oneida, P-SB-LB....10-F
Randolph, BT-BrT-RT....3-J
Rome, BT-BrT-RT....11-F
St. Lawrence, P-SB....11-B
South Otselic, SB-LB....10-H
Summitville, BT-BrT-P-SH....2-B
Van Hornesville, BrT....12-G
Warrensburg, BrT....15-E
Washington County, S-BT-BrT....15-G

BT (brook trout); BRT (brown trout); RT (rainbow trout); LT (lake trout); S (land-locked salmon); M muskalonge); P wall-eyed pike); SB (smallmouth bass); LB (largemouth bass); CB (calico bass); W (whitefish); LH (lake herring); SH (shad). Bullheads, yellow perch and bluegill sunfish also are propagated.

PUBLIC FISHING RIGHTS

Perpetual fishing rights have been acquired (to June, 1948) on 582 miles of the State's top trout streams (in addition to those on State land). Entrance signs guide anglers to parking areas and rights of way. Mileage is being increased steadily. Cross lines on mapped streams show location. Fishing rights from one shore line only may be indicated. Total mileage acquired for each stream indicated on list below.

STREAM	MILES
Ausable	13.29—15-C
Battenkill	8.78—15-G
Beaver	.21—11-D
Beaverkill	12.47—12-J
Big Salmon	27.63—13-A
Black River	22.42—11-E
Bouquet	13.71—15-C
Catharine Crk.	3.57—8-I
Catskill Crk	17.73—14-I
Cattaraugus	15.84— 4-I
Chateaugay	9.16—14-A
Cohocton	13.92— 6-I
Crystal	10.54—11-D
Deer River	10.19—13-B
East Canada	11.40—13-G
East Koy	11.46— 5-H
W. Br. Fish Crk.	32.56—11-F
Fish Crk.	41.86—11-E
Genesee R.	12.77—5-J
Independence	19.75—12-E
Kayaderosseras	18.50—14-G
Keuka Lake Inl.	1.09— 7-I
Kinderhook	17.32—15-I
Little Conewango	.42— 3-J
Little Salmon	7.83—13-A
Mohawk	.71—11-F
Moose	13.50—12-E
Oswegatchie	17.29—11-D
Otselic	24.39—10-H
Otter Crk.	16.00—11-"
Owasco Lake Inl.	16.29—9-H
Salmon R.	69.02—10-E
Schoharie	11.66—13-I
St. Regis R.	11.42—13-B
West Canada	9.02—12-F
Willowemoc	7.94—12-J
Wiscoy	8.37— 4-I

GAME FARMS

New York State's pheasant production is the Nation's largest. Seven big game farms (including the oldest in the U.S. — at Sherburne) are widely scattered to facilitate shipping. Quail and mallard ducks also are produced for stocking public lands. A complete wildlife research laboratory is located at the Delmar farm.

Brownville, P-D....10-D
Delmar, P-D....15-H
Howlands Island, P-D....8-G
Ithaca, P....9-I
Middle Island, Q-P....6-E
Rogers (Sherburne) P-D....11-H
White, J. A. (Batavia) P....4-G

P (phesants); D (ducks); Q (quail). Other species are propagated experimentally

PUBLIC HUNTING

More than 3,000,000 acres of State-owned land are open to public hunting as well as fishing. The location of this land is shown in solid green. In addition, a large portion of each of the red game management areas is posted for public hunting.

Bear Spring Mt....12-J
Canadaway Creek....2-I
Capital District....15-H
Cicero....10-G
Connecticut Hill....8-I
DeBar....14-B
Erwin....7-J
Hanging Bog....5-I
Happy Valley....10-F
High Tor....6-H
Littlejohn....10-E
Oak Orchard....4-G
Partridge Run....14-H
Pharsalia....10-H
Rattlesnake Hill....5-I
Three Rivers....9-F
Tioughnioga....10-H

DISTRICT OFFICES

Conservation Department district offices for special services dot the State and the number is being increased in line with necessarily extended services. These branch offices are shown by a red circle indicating district game protector (P'R), forester (F'R), game manager (GM), and fish manager (FM).

FIRE TOWERS

The Department's eyes for forest fire control are located in 99 steel towers manned by observers from the time snow melts in the Spring until it comes again in late Fall. The symbol on the map also includes the name of the tower.

WHITEFACE SKI CENTER

The Whiteface Mt. Ski Center, reached from the Whiteface Memorial Highway(both of which are administered by the Department through Commissions) was under construction in 1948 as one of the largest American developments of its kind. Several State Parks such as Allegany and Bear Mountain have extensively developed ski facilities. For information write the Department, or, for a ski map of the State, write the Department of Commerce.

TRAILS AND LEAN-TOS

Marked and maintained by Department forest rangers are 579 miles of trails threading the Adirondack and Catskill wilderness areas. Several rangers headquarters are maintained in the more remote regions. Much trails mileage also is maintained for Winter skiing. A total of 173 open lean-tos with fireplaces are strategically located along the various routes. See list of circulars.

CANOE ROUTES

New York State offers the canoeist many unusual routes ranging from one-day trips to the 102-mile paddle through the Fulton Chain, the Upper Saranac and St. Regis country to Loon Lake, Franklin County. The Fulton Chain trip, beginning at Old Forge, can be made in about ten days but with all the possible side routes (Marion River, Cold River, Tupper Lake, ponds north and west of Upper Saranac) a month or more could be spent on the water. Several portages are necessary. The Department maintains conveniently-spaced open lean-tos through most of the Adirondack canoe country. The Oswegatchie Inlet, Upper Hudson, the Kumjamunk and others offer one or two-day wilderness trips. In the Southern Tier the Allegany and Susquehanna routes have long been favorites. See list for canoe routes circular and map.

FOREST TREE NURSERIES

The Department operates two large forest tree nurseries — at Lowville and at Saratoga, the latter being the world's largest with a capacity of 20 million trees. These help supply the State's 513,497 acres of reforestation areas. Trees also are available under certain limitations to the public at cost. See list of circulars.

FRESH WATER GAME FISH —N. Y. ROD & REEL RECORDS

S. M. Bass—9 lbs., Friend's Lake Outlet, Warren Co., Geo. Tennyson, 1925.

L. M. Bass—Two fish tied, both 10 lbs. 6 ozs., Sacandaga Res., Peter DuBuc, 1942 and Rens. Co. Pond, J. L. Reed, 1931.

Muskalonge (Chautauqua) —42 lbs. 5 ozs., Chautauqua Lake, Daniel M. Horne, 1946.
Musky— No scales here
Pickerel— Scales both sides
Pickerel
Great Nor. Pike—46 lbs. 2 ozs., Sacandaga Res., Peter DuBuc, 1940 ★ (U.S. Record).
Muskalonge (St. Law.) —58 lbs. 5 ozs., St. Law. River, Arthur Lawton, 1944.
Pike— No scales Note eye
Lake Trout—31 lbs., Follensby Pond, Franklin Co., Malcolm Hain, 1922.
Note typical tail markings of these four kinds of trout
Brook Trout—9 lbs. 8 ozs., Punchbowl Pond, Sull. Co., Wm. Keener, 1908.
Brown Trout—19 lbs. 14 ozs., Ashokan Res., T. E. Spencer, 1925.
Rainbow Trout—21 lbs. Keuka Lake, Earl G. Crane, 1946.
Walleyed Pike—14 lbs. 7 oz., Oak Orchard Creek, Maurice O'Brien, 1946.

TRAILS AND LEAN-TOS

Marked and maintained by Department forest rangers are 579 miles of trails threading the Adirondack and Catskill wilderness areas. Several rangers headquarters are maintained in the more remote regions. Much trails mileage also is maintained for Winter skiing. A total of 173 open lean-tos with fireplaces are strategically located along the various routes. See list of circulars.

CANOE ROUTES

New York State offers the canoeist many unusual routes ranging from one-day trips to the 102-mile paddle through the Fulton Chain, the Upper Saranac and St. Regis country to Loon Lake, Franklin County. The Fulton Chain trip, beginning at Old Forge, can be made in about ten days but with all the possible side routes (Marion River, Cold River, Tupper Lake, ponds north and west of Upper Saranac) a month or more could be spent on the water. Several portages are necessary. The Department maintains conveniently-spaced open lean-tos through most of the Adirondack canoe country. The Oswegatchie Inlet, Upper Hudson, the Kumjamunk and others offer one or two-day wilderness trips. In the Southern Tier the Allegany and Susquehanna routes have long been favorites. See list for canoe routes circular and map.

FOREST TREE NURSERIES

The Department operates two large forest tree nurseries — at Lowville and at Saratoga, the latter being the world's largest with a capacity of 20 million trees. These help supply the State's 513,497 acres of reforestation areas. Trees also are available under certain limitations to the public at cost. See list of circulars.

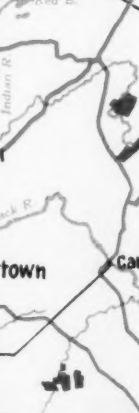
SARATOGA SPA

Saratoga Spa, operated by a Division of the Department, is open all year for treatments based on the use of the only naturally carbonated medicinal waters found east of the Rockies. The water from three of the 23 springs operated is bottled by the State. Complete facilities for baths, treatments, various sports, swimming and a hotel are available. For information and booklet, write Saratoga Springs Authority, Saratoga Springs.

OLYMPIC BOB RUN

The Mt. Van Hoevenberg Bobsled Run, used for the Olympic games and operated by the Conservation Department near Lake Placid, is the only one of its kind in America. It is open for both public and competitive riding. Fee nominal. See list of Circulars.

NOTE — Each issue of the New York State Conservationist magazine carries articles covering various of the mapped facilities in addition to maps of lakes, streams, etc. Subscription $1 yearly. Write the Department.



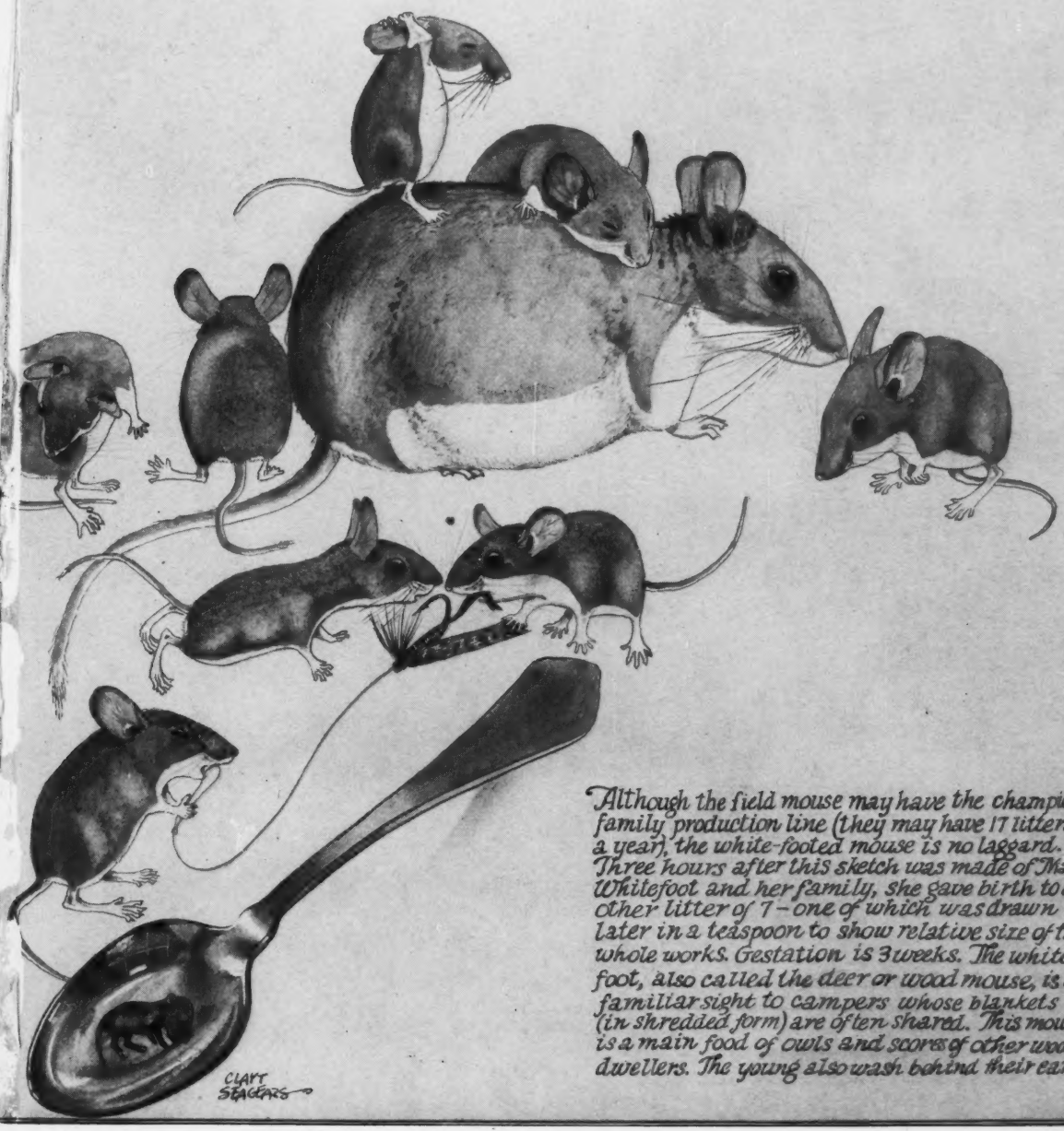
Walleyed Pike — 14 lbs. 7 oz., Oak Orchard Creek, Maurice O'Brien, 1946.

Crappie
Calico Bass
Yellow Perch

The INSIDE on the OUTDOORS

By Clayt Seagears

MOTHER INC.



Although the field mouse may have the champion family production line (they may have 17 litters a year), the white-footed mouse is no laggard. Three hours after this sketch was made of Ma Whitefoot and her family, she gave birth to another litter of 7 – one of which was drawn later in a teaspoon to show relative size of the whole works. Gestation is 3 weeks. The white-foot, also called the deer or wood mouse, is a familiar sight to campers whose blankets (in shredded form) are often shared. This mouse is a main food of owls and scores of other woods dwellers. The young also wash behind their ears.

BROWN TROUT

Salmo fario Linnaeus

Early breeding colors from male 14⅜ inches long